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Original Contributions.

OUR MISSION—HOW SHALL WE DISCHARGE IT?

BY B. HOLLY SMITH, D.D.S., BALTIMORE. READ BEFORE THE NORTH-EASTERN DENTAL ASSOCIATION, AT HOLYOKE, OCT. 17-19, 1899.

America has long been recognized as the mother country of dentistry, and she has been justly credited with giving a fostering stimulus to the progress and refinement of those practices which tend to elevate the character of operations performed by these specialists. More conservative sections have been content with slight improvement upon old methods, and have accepted charily teachings of a radical nature. Hence any deductions from observations of changes in methods of procedure must be largely the result of a study of American dentistry.

The history of dental practice here is not to be so well understood by reading or observing the history of any one man, but by following the record of his teachings as exemplified in the practice of those who have had opportunity of learning from him. If a practice is to be successful it must be judged by the result, not of one individual's efforts, but of the efforts of the many who essay to pursue it. Thus the reputability of bridge-work, cataphoresis, extirpation of the dental pulp, etc., must be established by an observation of the general result of these practices by the dental profession at large. That this is so is largely the result of the very generous plan of teaching which has been so persistently pursued, and which has received such universal approval in our dental associations. Any thought of personal profit, not associated with individual superiority, has long ceased to have any weight in the average dental mind. If a brother has met with success in any given line of practice he at once thinks it is good enough to report, and never that it would be to his advantage to conceal it.

If these statements are correct, why is it that the average patient seeking dental services does so with fear and trembling and often

with dire apprehension? Is it because the number of cataphoric outfits is insufficient, that cocain is not cheap, that obtundents of great variety do not exist? We are inclined to think that these are not factors in the condition. Is it not because the average dentist believes and freely states and illustrates to his patients that a certain amount of pain is to be expected in dental operations, and if the patient does not expect pain he need not come around? This feeling and plan of practice is partly due to an unwillingness on the part of the operator to deviate from the usual routine of everyday procedure, and partly to the fact that the majority of patients, either because of temperament or willingness to submit to the inevitable, raise only feeble protests to the infliction of suffering. The work, accomplished without serious complaint on the part of the patient, is done to the satisfaction of the operator. Is this right? Can we call such service a conscientious discharge of our obligations?

I contend that the most approved dentistry can be practiced without giving pain; and the reason it is not done is not so much that the means are not to be secured, but that there is not a primary impulse and determination to practice only painless dentistry. The necessity for such practice is not apparent to the minds of many. All would be anxious to adopt some appliance or means which should accomplish expeditiously and with little trouble the object aimed at, but when it resolves itself into a careful use of only those methods which are painless, whatever their expense in time and trouble, they decline to make the effort.

Dentists as a class are mechanically resourceful. Few operations but admit of a variety of ways of performance, and the best method is always sought; not always the easiest, the cheapest, the one that will consume the least time, but the one that will secure the best results—those most enduring, useful, ornamental and natural. As this is true, I can but believe that if the necessity for painless operations were appreciated fully this same resourcefulness would cause the average operator to succeed in practicing painless dentistry with the means at hand.

There are few practitioners but will listen to suggestions of helps in practice; few who do not desire a reputation for skill and cleverness. Do we all strive equally hard to avoid the infliction of suffering? From a careful observation of clinicians at dental meetings I am forced to conclude that many operators demand from their

patients a tolerance to suffering out of all proportion to the necessities of the occasion. Now if this is done publicly we naturally infer that the private practice of these operators does not vary materially. It is not intended that this shall be a criticism, but it is hoped some may agree with the writer that greater effort can and should be put forth to lessen the discomfort and suffering of patients, and to change in the popular mind the old estimate of experiences in dental offices.

With the yearly influx of graduates into the practice of dentistry (an influx plainly out of proportion to the increase of population), some thought must be given to a legitimate and available source of patients for them. I do not believe that any dentist is paid too much for his work, but I do believe that many do too much work—both for their own good and for the welfare of their patients. If we were content to do less, what we do might be painlessly performed, and I have no doubt we should be given cheerfully better remuneration. A few would thus be weeded out of each office. Then has it not come to the knowledge of us all, that countless numbers avoid the dental office and suffer all the ills produced by diseased dental organs, rather than run the gauntlet of dental attention? That this unfortunate condition can be bettered I firmly believe, partly from the fact that careful record fails to reveal any person entertaining such an estimate of necessary suffering, who has been exclusively under my care or that of *some* of my professional brethren—whether in the case of old or young I find this dread and apprehension entirely absent. They make altogether different patients from those trained in the old school, or those whose morbid imaginations have been fed by recitals of exaggerated sufferings of long ago. Dentistry is not necessarily painful, and this truth I would that my professional brethren should both practice and preach until it passes into one of the proverbs of the people. I would have it repeated at the opening of every lecture or professional assembly. I would put it in the mouth of every dentist and friendly patient, and I would insist that operators should not make it a lie.

If the true mission of the dentist is to be studied, we must see at once that he sustains to his patient a unique relation. His life and work have to do with service, yet he is sought as a master. Few of the patients who require extra precaution or attention seek us without entertaining apprehension and often a rather limited confi-

dence. In the first contact with his patient the dentist should recognize his opportunity to strengthen this confidence and dispel distress. He is to direct the thought as well as the movements of his patient; and to dominate and inspire, to give life and courage. Falling short of this the vantage-ground is yielded and difficulties are multiplied. It would seem absurd to claim that the laws of temperament are to be ignored in attempting to characterize a desirable attitude to be maintained by the dentist toward his patient, or to assume that because a man is a dentist he should therefore be a past-master in the art of psychic influence and suggestion. No such extravagant assertion is made, but I do insist that because a man is a dentist and success comes through these avenues, it therefore behooves him to become a student of these methods.

Lyman Abbott has said, "We are all engaged in either giving life to others or draining life from others. The parent gives life to his children, the teacher to his pupils, the minister to his people, the true statesman to his constituency. The real exchange is not in material things but in life. This capacity to give life makes the true leader. All great men are life-givers, no others are truly great." Dignity, sympathy, real interest should characterize the bearing and conduct of the operator from the start. Assurances of protection, avoidance of pain and briefness of attention will restore confidence; then attend to the mental condition; the guidance of the thought into such paths as lead to equanimity and away from morbid broodings and apprehension. As physicians this is our plain duty. We remember that mental disturbances may make the mother's milk a poison to her child; mental excitement is a common cause of indigestion; mental depression includes bowel disorders and renders the subject more liable to succumb to disease; the secretions are changed and perverted by mental impressions; therefore at the start we are to banish the scarecrow and place the patient at rest because his mind is at ease.

The employment of labor in its legitimate sphere is a presumption of the existence of confidence between employer and employed. This is the foundation on which are built the exchanges of life, and it is a prerequisite in any engagement between dentist and patient that confidence shall be entertained by the latter. Despised service is never to be rendered by those who wear our badge. On the contrary, there is abundant reason why a confidence farther-reaching

should characterize those who seek our aid. The utter helplessness and ignorance of the subject, his entire dependence on the operator, and the great benefit to be derived from the skillful performance of the work—all contribute to establish relations of confidence and esteem. Let us therefore recognize the sacredness of our position and cease to regard the work in any commercial light. Meet this confidence with commensurate and alleviating skill and attention which are the result of a careful study and experimentation of the best means to be obtained in the practice of painless dentistry.

Means to this end of a material character have been so much discussed that I shall content myself with a description of some applications with which I have been particularly successful. I have indicated that suggestion is a useful agent; in many cases I have especially found it helpful with subjects inclined to be hysterical, if used in conjunction with preadministration of valerianated ammonia, Hoffman's anodyne, or a generous portion of Madeira wine. I scarcely think the dentist justified in resorting to the graver condition of hypnotism, certainly not without the full consent of patients and their sponsors.

By way of preliminary treatment, I have found most useful the suggestion of the late Dr. Frank Abbott; namely, the frequent and protracted use of a solution of bicarbonate of soda as a mouthwash. When proximate cavities are to be treated and cotton is first inserted for purposes of separation, these cavities, if not deep seated, are lined with oxychlorid of zinc, being careful to remove as much of the debris or disintegrated dentin as can be done without giving discomfort. The use of rubber for producing separation is entirely too painful and should not be indulged in. A very thin strip worn for a few hours and replaced by linen tape or cotton is not usually open to this objection. In deep cavities oil of cloves or eugenol, mixed in paste with oxid of zinc, is substituted for oxychlorid.

When these cavities are to be operated upon vapocain has been found helpful. When this fails cataphoresis is resorted to and cocaine used. I have never seen any evidence of injury to the pulp by the use of cataphoresis or cocaine. I have never used this method in proximate exposures of that organ; obtundents in such cases are often harmful and more conservative treatment is indicated. Instead, I would first remove as much of the disintegrated structure as practicable and apply eugenol or oil of cloves as above described;

place over this a concave cap of metal; fill the cavity with temporary stopping, and repeat in a week the effort to excavate. If successful, cap with eugenol and oxid of zinc, using again the piece of concave metal to prevent pressure, and fill the cavity with oxyphosphate cement.

I listened with incredulity some years since to a paper by Dr. B. F. Arrington, in which he advocated as a painless procedure excavations under a stream of cold water, but my confidence in the man prompted me to try his methods. In cervico-labial cavities I now frequently use it with much success, excavating while a stream of cold, often iced, water is directed from a very fine-nozzled syringe upon the cavity. I apprehend that the shock of the cold produces the same bloodless condition which follows excision of a tooth at the neck, when, as we all know, live pulps may be removed painlessly. If the patient be informed previously, this shock is a trifling matter and is much preferred to the dreaded pain of excavation without it. Of course this plan cannot be used in deep-seated cavities without pain and injury.

Experiments with the cold suggested by Dr. Arrington caused me to cast about for some way to make use of the intense cold of liquid air. Upon consulting Prof. Wm. Simon of Baltimore he suggested that liquid carbon dioxid and liquid nitrous oxid should give cold sufficient to produce pronounced impression. Under his direction I arranged my cylinder of carbon dioxid higher than the chair and upside down, so that the liquid might flow through the tube arranged to conduct it to the desired point. I found in a number of cervical cavities, where sensation was so marked that the slightest contact of the explorer was very painful, that the momentary application of the carbon dioxid gave entire anesthesia, and that the duration of this anesthesia was sufficient in most cases to permit of excavation. It was necessary to isolate the tooth with rubber-dam, and in some instances, where cervical exposure existed, resulting from elongation or loss of gingival structure, to protect that part by a covering of pink gutta-percha. The first experiments with the gas were not so successful, partly because of the crudeness of the apparatus and the lack of experience in application. Pain was produced whenever the application was continued for more than a moment, or whenever a tooth, which had been previously susceptible to shocks from changes of temperature, was in-

cluded in the area of application. A few experiments conclusively demonstrated that in these liquid gases we have agents which, while not having a universal or possibly not even a wide range of usefulness, ought yet to be almost indispensable in a certain class of cervical cavities. The success met with gives hope to the suggestion of the use of liquid air for obtunding sensitiveness in almost any cavity in which the pulp is not approximately exposed. The attempt to apply carbon dioxid to cavities in the molar teeth was productive of some embarrassment, because of the volume of gas which was liberated. The regulation of the amount was difficult with the improvised apparatus, and the difficulty increased by the necessity of having the gas as nearly liquid as possible in order to produce a profound shock over a limited area.

In removal of the pulp my recent procedure has been to expose it under the influence of cocain cataphorically applied and extract it after impressing cocain. This impression is accomplished by applying spunk saturated with aqueous solution, and exerting gentle pressure until thorough and complete anesthesia supervenes. Dr. W. C. Wilbur of Corning, N. Y., has recently reported to me a number of cases where he has used a saturated solution of cocain in chloroform. A trial in a number of cases was absolutely successful in my hands, and I have no hesitancy in believing that chloroform increases the effectiveness of cocain.

The extraction of teeth and opening of abscesses should be done under nitrous oxid gas; but where there is any objection to this agent, injections of cocain are effective in relieving pain. If the reverse end of a match be dipped in a saturated solution of carbolic acid and cocain and applied prior to the injection, with gradually increasing pressure at the point of gum where the needle is to be inserted, it will render that operation painless.

Where teeth containing putrescent pulps involved with pericemental inflammation and great tenderness are to be drilled into, local injections are helpful. The tooth, however, must be braced, either with a clamp, or modeling composition formed about it. After the compound is formed about the neck of the tooth to be drilled and chilled, it can be held in place so as to support the latter and prevent the pressure from causing pain.

The most effective assistance to any special means employed for relieving sensation is sharp instruments and burs. The latter

should never be allowed to revolve as a saw is used in cutting wood, but used in a dipping motion, a touch and go movement. In polishing a stream of compressed air directed upon the filling will prevent heating.

A word as to length of sitting—these should usually be of short duration. A dental chair should not be the place to test the endurance of those who occupy it. If extensive contour work is to be done, requiring sittings of an hour or an hour and a half, they should not occur oftener than once a week, though I can see no reason why the long sittings should not be alternated by short ones. I have in mind histories of collapse, nervous prostration and typhoid fever, following protracted dental operations; and I have received of late several requests from physicians, who referred new patients to me, requesting that the sittings should not extend over half an hour each. One of these physicians has related some very interesting cases which he attributed to the distress and loss of nervous force produced by painful and extended dental operations.

I am fully aware that for many if not most of our patients these recommendations are superfluous; but I believe even in the handling of these it will pay to cultivate an increasing gentleness, a refinement of touch and attention, which let me hope will dispel entirely the old-time dread of the dental office.

Discussion. *Dr. G. A. Maxfield*, Holyoke: Dr. Smith has touched upon a very vital point in our practice. The success which the numerous dental parlors have in attracting victims shows that people nowadays are looking for painless dentistry. The community is taught to believe in advance that pain and the dental chair are linked together. This is especially the case with children, and the parents are largely responsible for the fear. Even if you do not hurt the patient, he or she will carry the previous impression after the operation and will imagine that pain has been experienced.

If all pulps were in their proper positions in the teeth there might not be much danger in the use of liquid air, but how often do we see a very shallow cavity and yet an exposed pulp. I have removed pulps with the aid of cocain for many years, injecting it with a syringe, and also saturating cotton and pressing it down onto the pulp, which latter method is preferable. There are certain conditions, however, where cocain has no effect at all on the pulp. A

combination of chloroform and any suitable medicine will penetrate the tissues and accomplish the desired effect more quickly than any other solution.

Dr. L. C. Taylor, Hartford, Conn.: In my opinion hypnotic suggestions carry great weight. When you say to a patient, "That hurts you, does it?" he replies, "Yes, it does." But if you take another instrument exactly similar to the first one and do the same thing with it, and ask, "That does not hurt you, does it?" the patient will reply, "No, that is a great deal better." When your patient is leaving the office say to him, "You have not been hurt much to-day, have you?" and he will answer, "No, I have not." Furthermore, that patient will in all probability speak a good word for you within twenty-four hours, but if you do not follow out these little suggestions the opposite may occur.

UNIFICATION OF LAWS.

BY JOHN F. DOWSLEY, D.D.S., BOSTON. READ BEFORE THE NORTHEASTERN DENTAL ASSOCIATION, AT HOLYOKE, OCT. 17-19, 1899.

The end of our century is of all things progressive. We are swept along on the wave of public spirit and public necessity, which demands an advance in all education, and the dentist of the future must be an educated man as well as a proficient practitioner. To insure this I believe there is need of a higher standard of qualification before entering upon the study of dentistry, and the best way to bring this about is to make the entrance examination for our colleges one that would require at least the academic training of a high school graduate. Throughout the country an almost universal desire for unification of dental laws and interstate recognition of licenses is felt, and while it may not be possible to attain the same high standards in every state at once, it is plainly in evidence that there are at this time several states whose requirements are so high that it would warrant their being the nucleus for a beginning of interchange of certificates. There is, however, in the state boards throughout the country great differences not only in the legal standards required, but great disparity in the manner of ascertaining the status of the candidate with regard to professional fitness, and these conditions antagonize any attempt at interchange of certificates at present. Until some plan for uniform standards be adopted any interchange would be grossly unjust.

It must be obvious to even a casual observer that this will not be an easy matter to adjudicate. Boards demand high standards of the colleges, and in return it is only the right of these same colleges, of the profession, of the people, and especially of those who meet the higher educational requirements, that the boards should stand on the same high plane of excellence, and that no man should enter the profession of dentistry excepting through a dental college of high standing. Until boards are willing to adopt the sort of uniformity which they demand from colleges I can see no way in which our methods of ascertaining fitness of candidates may be fair and equal; nor any scheme of reciprocity in exchange of certificates. Let me repeat, and in my opinion it cannot be said too often, if the various examining boards demand a high and as nearly as possible a uniform standard of qualification for practitioners of dentistry, and in so far as practicable uniformity of legislation, I believe the ultimate result will be to secure a safe, judicious and fair exchange of certificates by examination from one state board to another; and this is the only way it can be done.

Until recently each county in Massachusetts held its individual examination for the bar, and Suffolk County was notably more difficult than some others. It became the custom for law students, who did not feel competent to pass that examination, to go to some county where the examination was easy, obtain a license to practice, and return to Suffolk County to open an office. As a matter of fact it was this abuse which led to the establishment of a state board to regulate the practice of law. What would prevent the incompetent dentist from doing likewise? Therefore I say again, an effort must be made for uniformity in legislation and standards throughout the country.

Dr. Ottolengui a short time since submitted these two plans to the various state boards for consideration. The first was, "That applicants for licenses should be required to present the papers upon which they were examined at college when obtaining their diplomas. The state board upon being satisfied with these original examination papers that the applicant is worthy, to give him a license to practice; and secondly to accept a license of this character granted in similar manner by any other state." His second plan: "For all state boards, members of the National Association of Dental Examiners, to make use of identical examination papers, the same

being prepared by a committee of the national body; licenses granted upon such examination papers to be interchangeable among the states represented in the National Association." My reply to these two propositions was that neither was practical nor feasible. The first, because experience has taught us that many graduates of reputable colleges fail to pass our examination; the second, because it seems to me dangerous to concentrate so much power in a few individuals.

If the idea which was inaugurated two years ago when the New England boards formed an association shall be adopted throughout the country, viz., examine every one—graduate and nongraduate—have the standard high, both theoretically and practically, especially the latter, I believe we will have solved the problem. Until this is done unification of laws and interchange of certificates can never be accomplished.

Discussion. *Dr. J. Searle Hurlbut*, Springfield: Unification of laws seems difficult of accomplishment. A chain is no stronger than its weakest link, and this is applicable to the state boards. The young man studying dentistry will search out the state where the easiest examination is held, and will then pass his examination there. He will act on the same principle as applicants for divorces did a few years ago, when they went to Chicago to obtain same. When Illinois stiffened up the laws the applicants went elsewhere. The state which allowed a candidate to pass with the least examination would have an immense amount of work to do.

It would be easier for us in Massachusetts if we could recognize a diploma as many other states do, but under our law every man is examined even though he has been practicing in another state for years, and this is the proper course. It seems hard that a man cannot move from one state to another without passing an examination, but such ruling is for the betterment of our profession.

PORCELAIN.

BY A. M. ROSS, D.D.S., SPRINGFIELD, MASS.

A very familiar substance to most people is clay, and its value and many of its uses are known by every school boy who has done any modeling. Its hardness when dry and its tenacity when wet are appreciated by many a farmer's boy to his sorrow and disgust. By both of these boys it is known, for example, that a cube of clay

deprived of its hygroscopic water by the heat of the sun may be successfully used in building in countries having little or no rain. Such a cube exposed to fire loses the water of chemical combination also, and it thereafter will absorb no water chemically, though it will absorb water mechanically, proportionate to the porosity of the mass, unless the surface is glazed.

Every one is familiar with the appearance of an ordinary brick, but few people, however, may notice the difference between it and a hard-baked one out of the same kiln, excepting that of color. There are other differences: size and density. It being smaller, the blue brick gives evidence of greater shrinkage and density.

China clay, *stigilla pura*, which is a pure silicate of alumina, is the base of the subject of this sketch. As in brick-making and pottery, so is it in porcelain-making—there is a process shrinking, and *"the contraction of the mass in firing is equal in all directions."* This fact deserves careful consideration in making inlays, as it shows the importance of beginning the work by placing a small amount of body first at the base, and proceeding from that point in order to avoid distorting the matrix.

As to porcelain bodies, there may be made a comparison between the low-fusing products and an ordinary, easily-abraded brick in which there is greater porosity than in the hard-baked brick (that of itself compares with the products of higher fusing bodies), as there is in the one more of the water of chemical combination than in the other. If the low-fusing porcelain is more porous than the other, the more dense material is as indispensable for inlays as it is for other work, because the test of time will show, as it has already, slight changes of color. And I think that if platinum could be as easily adapted for matrices as is gold, there would be no recognition to-day of low-fusing bodies, just as there is now no recognition of vitrified bodies. This, then, is proof that the best material for matrices is not yet recognized.

If worthy men protest against the indiscriminate use of gold crowns, and object to the needless practice of approaching proximate decay in the anterior teeth from the labial surfaces, why should they not also strenuously object to this deep slicing away of teeth in order to stick on knife-edged slabs of porous porcelain with imperfect cements? If the perfect matrix material is not yet found, neither is the cement perfected, and regarding the porcelain itself

the question is still open as to degrees of translucency because of certain color values of cements yet to be perfected.

It is therefore certain that the whole subject and process are yet in the experimental stage. It ought to be necessary only to look at recent history in dentistry in witness of the fearful slaughter of teeth in the interests of the Klondike, to justify every one in hoisting cautionary signals regarding inlay work, and to make an appeal for conservatism.

Inlay work is bound to be a good thing, but at the best it will have its limitations of application and usefulness, and as to the permanence of such work, no one ought to contend that with knife-edge margins it will stand on occlusal surfaces under great stress, yet that is the kind of margin the inlay must present in proximating large cavities in the incisors to the normal occlusion of the six anterior lower teeth. Where cavities may be made reasonably deep, and, as in labial cavities and others that may be directly approached, it is possible to make the angles of margins fairly acute, and the inlay will have no knife-edges to break down.

EXTENSIVE IRRITATION FROM A MALPOSED ROOT.

BY C. M. BALDWIN, D.D.S., CHICAGO.

In July the following case appeared at the South Central Charity Dental Clinic. The patient was a woman, thirty-three years old, had been married when sixteen, had borne seven healthy children, and never had a miscarriage. When a girl she was treated for tuberculosis, and made a complete recovery, though six brothers and sisters died of the disease. In addition to her home duties she had washed and scrubbed for others, consequently was somewhat emaciated and aged much beyond her years.

In November, 1896, a red spot was noticed on the left cheek opposite the lower first bicuspid. Her fears were aroused and she went to the free dispensaries of two of the largest medical schools. In describing the case to the students one of the physicians called it a cancer, saying that an operation would be necessary to remove it, and that the necrosed bone would have to be scraped. The patient inquired if that would not leave a bad scar, and the doctor said there would be one anyway. One doctor referred her to one of the dental schools, saying that her's was a very bad case, which should be treated by a dentist. With the exception of occasional sharp

shooting pains along the inferior maxillary nerve she experienced but little annoyance, and when an appointment was made for the operation she did not present, but postponed it as long as possible.

Two years later she came to the Charity Dental Clinic. She said that the condition was much worse in every way. The inflamed area had spread until it was almost two inches in diameter, circular in form, slightly swollen, of a dull red color, and the surface was uneven like that of a cauliflower, having a fissure in the center about three-fourths of an inch long and one-sixteenth deep, the edges almost meeting and covered with broken-down epithelial cells, presenting a caseous appearance. During the last two weeks a gradually increasing numbness in the part appeared, so that there was sufficient anesthesia to allow of considerable pressure without any pain, except in the center.

The mouth was in a terrible condition, tartar and fermenting debris covering the teeth and numerous roots. The upper right second bicuspid was the only tooth missing, but the cuspids and incisors were the only sound teeth in the lower jaw. The lower right second molar was badly decayed, while only the roots remained of the first molar and both bicuspid. Only the roots were left of the molars and bicuspid on the lower left side. The lower left first bicuspid was partially displaced. The cervical portion remained in place, while the apex was deeply imbedded in the sub-mucous tissues, pointing directly towards the center of the inflamed area upon the cheek, at an angle of forty-five degrees. The soft tissues over the middle third of the root were severed as if by a knife, and the external plate of the alveolar process had been destroyed by the abscess, leaving this portion of the root exposed to view—white as bleached bone. The upper third of the root was firmly held by the alveolar process.

The patient reported having had numerous abscesses from the different roots, and was quite certain that this root was abscessed before her marriage, over seventeen years ago. When the pus pocket became filled she applied a fig to evacuate it, and claimed to have repeated this over one hundred times for this one root. When I saw the case there was no pus present. There had never been any attempt made to remove the root, neither before she went to the medical schools nor by any one there. At neither school would they extract the root unless she remained in the hospital over night.

Since nature moves along the line of least resistance, doubtless as the alveolar process became weakened and broken down the force of masticating upon these roots, the downward and lateral pressure exerted, tipped this root into the position in which I found it. The patient said the root had been in that position for many years. While we frequently find third molars erupting having their occlusal surfaces directed mesially or buccally, it is very improbable that this tooth erupted as found, but rather that it became displaced soon after the process was destroyed.

I thought the entire trouble with the cheek had been caused by the mechanical irritation of the root, and decided upon its immediate removal. The abscess had destroyed the alveolar process and the soft tissues covering it, but was not directly responsible for the condition of the cheek. When the trouble started she had been pregnant for some months, hence more liable to succumb to any destructive process; and when the irritation was greatest there was no pus about apex of root. After pressing the soft tissues away an elevator was placed under the free end of root, raising it until the weakened process released its hold, altogether making a very simple operation. The patient went home immediately and felt no unfavorable effects at any time following the extraction. She was directed to report in less than forty-eight hours, but I did not see her again for about four weeks, when almost all effects of the abscess and root had disappeared. The active irritant being removed nature needed but little assistance to complete the cure. Six weeks after the root had been removed the parts were healed, but slight redness remained, all soreness and pain had disappeared, and the sensory nerves were normally responsive.

The neglect and physical condition of the patient seemingly would have favored the development of epithelioma under such conditions, for while she was but thirty-three, she appeared to be past forty. This heavily burdened woman had been weighted down with the prospects of an operation for the removal of a cancer and necrosed bone. The dread of such a formidable ordeal was sufficient to cause her to postpone it indefinitely, as the pain most of the time was not great, but how great a relief it would have been, mentally and physically, and how gladly would she have had the root extracted years before, had she been instructed as to the dangers possible from the retention of such teeth. The charity dental

clinics may do much good to the ignorant and poor classes, by *enlightening* them, as well as by affording relief from their sufferings.

PROPHYLACTIC TREATMENT OF TEETH BY PATIENTS WITH FLOSS SILK AND LACTATE OF SILVER.

BY EDWARD S. NILES, D.D.S., BOSTON READ BEFORE THE NORTHEASTERN DENTAL ASSOCIATION, AT HOLYOKE, OCT. 17-19, 1899

There is in general use among dentists an antiseptic well recognized as a preventive of decay, namely, nitrate of silver. Probably everyone here has used this agent for superficial decay in some cavities of permanent and deciduous teeth. The great objection to it, however, is discoloration.

For some years I have been searching for a preparation which could be used daily in the care of the teeth, and have discovered a practical antiseptic in lactate of silver. This is not so strong as the nitrate, and possesses in a somewhat less degree the same antiseptic properties. It also turns dark when exposed to the light. This is overcome by exposure to the sunlight until it will not darken any longer. A small quantity of tincture of orris root will conceal the metallic taste which accompanies silver salts.

I procure common floss silk, waxed, in hanks from the manufacturers, and have the spools come separately; then macerate in the above named solution, 3 per cent, for two weeks, and afterwards expose it to the sunlight for a day, which turns the white silk dark and to some extent decomposes the solution on the silk, but leaves an antiseptic property on the silk of about one per cent. The silk thus prepared will not turn the teeth dark to any perceptible extent, as the dark color has already been developed by the sunlight.

Floss silk thus prepared is perfectly safe for the daily use of patients. It is readily seen that in passing this silk between the teeth, where the brush will not reach, they are not only mechanically cleaned, but a force is left there which is recognized as especially antiseptic for the existing evils preceding actual decay. Patients who for fifteen years or more have had a recurring white decay around the cervical walls have found relief during the past two years in the use of this prepared floss, the white decay having entirely disappeared. I therefore feel safe in asserting that decay between the teeth can be successfully treated by this method.

I am not responsible for the medicated silk offered for sale by silk manufacturers, though the preparation for treating the silk and the idea was taken from me. Those who do not wish to prepare the silk in their own offices can procure it of the Dental Protective Supply Company, or from me direct.

PAPILLOMA OF THE TONGUE.—J. Grant Andrews reports a case in which many features suggested carcinomatous change. After removal there was a recurrence in the submaxillary lymphatic glands.—*Edinburgh Med. Jour.*

GROWTH OF THE HAIR.—J. Pohl, *Dermatologisches Centralblatt*. The hair was cut close to the head in small patches on several persons and the growth carefully measured. The first point noted was that cutting the hair checks its growth for a month, after which it returns to normal. The average rate of growth in a month was 10 to 13.5 mm. in boys 11 to 17 years of age; 15 mm. in the writer, between his twenty-first to twenty-fourth year, 11 mm. at 60. In five insane patients the rate of growth was less: 7, 8, 9 and 12 mm. a month. The curious fact was established that each two to four hairs form a group more closely connected than the rest, and that one hair of this group grows more rapidly than the rest for a while and then stops, when its neighbor assumes a more rapid growth for a while and then stops, the next continuing the rate, and so on until the turn falls again to the first hair; also that hairs have a typical length of life, after which they fall out, and this occurs in a group in the same alternate manner as the growth progresses. These phenomena were noted in the hairs on the back of the fingers as well as on the head. The typical length of a hair is twenty to forty inches, and its life two to six years. The highest rate of growth occurs in the middle of this allotted span. Fever checks it.—*Jour. A. M. A.*

ETHEL BROMID AS AN ANESTHETIC.—In the *Maryland Med. Jour.* Dr. J. E. Kempter recommends ethyl bromid as a general anesthetic in short operations. Its advantage is its rapid action, and it is particularly well adapted for children. It is dangerous when used like chloroform—that is, with an admixture of atmospheric air, or when the administration is protracted. Dr. Kempter gives it in the following way: A crash towel is folded into the shape of an "air-tight" cone and rendered impervious by a layer of paper, the base of the cone being sufficiently wide to cover both nose and mouth. The amount of ethyl bromid varies from one to two and a half drams for children, and from two to three drams for adults. The full dose is poured into the inhaler, which is immediately held down firmly over the patient's nose and mouth and not removed until full anesthesia is induced and all struggling ceases. The patient sometimes struggles violently, and to the uninitiated appears to be in danger of asphyxia, but the cone must not be removed, for in no other way can rapid and safe anesthesia be obtained by ethyl bromid. Generally speaking, one minute will suffice to induce deep narcosis. The patient awakes suddenly, as if from a natural sleep. Dr. Kempter says that under no circumstances should the inhaler be removed for the purpose of prolonging the anesthesia.

Digests.

UNDERCUT MODELS. By Dr. L. P. Haskell, Hinsdale, Ill. Prepare the model as for any case, always flaring the sides so that it will drop readily from the mould and shellac. Oil as far as the undercut extends, set upon a glass slab or other smooth surface; mix plaster and coarse short fiber asbestos, equal parts, not too thin, and spread upon the undercut surface about one-quarter inch thick at the base, and half as thick at the top of model; when hard trim smooth, and trim the ends at a bevel so it can be easily replaced in the mould, dry thoroughly and mould; it and the model drop out readily; replace the core in the mould and cast the die. The process is simple and effective.

Oiled sand is of great advantage to the dentist who desires to expedite his work, as it is always ready for use, but cannot be used with zinc, as it is poured so hot it burns the oil, but there is no necessity for using zinc, as a proper babbitt metal is far preferable, being the only alloy that has all the requisite qualities for dental dies, and produces the most satisfactory results, as demonstrated by nearly fifty years' use, after several years' use of zinc.—*Items, Feb. 1900.*

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THE KENTUCKIAN'S WOES. Man born in the wilds of Kentucky is of few days and of easy virtue.—He fisheth, fiddleth, fusseth and fighteth all the days of his life.—He shunneth water as a mad dog, and drinketh much whisky.—When he desires to raise hell he planteth a neighbor, and lo, he reapeth twenty fold.—He raiseth even from the cradle to seek the scalp of his grandsire's enemy, and bringeth home in his carcass the ammunition of his neighbor's father-in-law, who avenged the deed.—Yea, verily, his life is uncertain, and he knoweth not the hour when he may be jarred hence.—He goeth forth on a journey half shot and returns on a shutter shot.—He raiseth in the night to let the cat out, and it taketh nine doctors three days to pick the buckshot from his person.—He goeth forth in joy and gladness, and cometh back in scraps and fragments.—He calleth his fellow-man a liar, and getteth himself filled with scrap-iron, even to the fourth generation.—A cyclone bloweth him into the bosom of his neighbor's wife, and his neighbor's wife's husband bloweth him into the bosom of Father Abraham

before he hath time to explain.—He emptyeth a demijohn into himself and a shot-gun into his enemy, and his enemy's son lieth in wait and lo, the coroner ploweth up a forty acre field to bury the remains of that man.—Woe, woe, is Kentucky.—*Ed. Med. Mirror.*

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IMPACTED TOOTH-GERM THE RESULT OF A TRAUMATISM. By Alfred E. Blake, D.D.S., San Francisco. Harry H., age eight years, was referred to the writer for treatment of an enlargement in the upper jaw, which had been diagnosed as a malignant growth. Examination showed a tumor the size of a hickory nut, ovoidal in shape and occupying the right myrtiform fossa. The upper lip was distended and the alæ of nose broadened. The parents stated that three years previous the boy had had a fall, knocking out the upper deciduous centrals and right deciduous lateral. The parts healed readily, and in due course of time the permanent centrals appeared. As time advanced the right central incisor protruded more and more from this tumor, causing a noticeable deformity. The tumor was more extramaxillary than intramaxillary, firm on pressure, showing entire absence of pain, and the gum covering swelling appeared perfectly normal.

Treatment.—The right central incisor was extracted and crucial incisions were made into the tumor; several septi of bone were broken up and a red jelly-like mass was curetted out, exposing the undeveloped lateral incisor in an abnormal and transverse position. The tooth was removed and cavity packed with gauze for twenty-four hours to control the slight hemorrhage. On removing gauze the flaps fell naturally into cavity. No inflammation developing, patient was dismissed in one week.—*Pacific D. Gaz., March.*

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NASAL DRAINAGE FOR EMPYEMA OF ANTRUM. Roaldes (*N. Y. Med. Jour.*, Jan. 6, 1900) reports five cases of antrum operation cured by what he terms the Caldwell-Luc method, one having for its essential principles the cleansing and curetting of the cavity through a large opening in its anterior wall, and the subsequent drainage through a large opening into the nasal passage.

The technique of the operation was carried out as follows: The patient having been chloroformed, the inferior turbinate body of the affected side was attacked with a cutting forceps and its anterior third removed, after which the nasal fossa was firmly packed with

gauze and attention turned to the opening of the antral cavity through the cuspid fossa. The upper lip being everted and well retracted by an assistant, the incision was made through the soft parts, beginning just below the gingivo-labial fold near the frenum anteriorly and extending posteriorly in a horizontal direction back to the root of first molar. The periosteum was included in the incision, and both flaps were detached from the bone and retracted so that the bony anterior wall was laid bare. A chisel was then used to make an opening into the cavity at the deepest point in the cuspid fossa, and by means of bone-forceps this opening was enlarged so that the finger could readily be introduced and extended anteriorly almost to the nasal process of the maxilla. This gave free access to the cavity for the introduction of instruments and inspection with the eye and finger. The antrum was found to be lined within by a thick growth of polypoid tissue that almost obliterated its cavity. Quite a free hemorrhage occurred at the stage where the antrum was opened, and this tissue was attacked with a curet; but firm pressure by means of a gauze pack quickly checked the flow, and the scraping was systematically continued until the cavity had been deprived of all its interior lining and nothing remained except the bare bony walls. This done, a temporary gauze pack was introduced into the cavity, and the drainage-way into the nose was established as follows: The pack being removed from the nose, the finger was introduced and placed upon that part of the antral wall corresponding to the resected part of the turbinate. With this as a guide, a chisel was placed upon the corresponding point on the side of the cavity and used to break away a part of the bony wall, the opening being made sufficiently large to permit of the free passage of the finger. Any remaining shreds of mucous membrane left on the nasal side were cut away with a biting forceps, so that the artificial hiatus thus made would be in nowise obstructed.

It only remained now to suture over the wound made in the cuspid fossa and cut off all communication from the mouth. With the lips well retracted and a properly curved strong needle employed, no very great difficulty was experienced in carrying out this step of the procedure. Rather fine catgut was employed in interrupted suture, the mucous membrane and the periosteum being caught up together and brought into firm apposition over the breach in the

bony wall. Before the cavity was finally closed, however, the gauze packing was removed, iodoform powder insufflated, and a fresh strip introduced through the nose, so as to avoid any difficulty in its removal at the first dressing a few days later. The dressing was renewed on the fifth day and the cavity irrigated with warm boric solution. The buccal wound had healed by first intention. The patient remained in the hospital twelve days, at the end of which time she was allowed to go out and resume her usual vocation, being instructed to return to the morning clinics for further treatment. At the end of a few days the gauze dressings were discontinued and the patient was taught to introduce a cannula through the nasal opening and wash out the cavity twice daily. This she did conscientiously, and at the end of six weeks all discharge had ceased, the injected solutions coming out clear, and the empyema was pronounced cured.

Luc has operated upon thirty-three cases by this method, all of whom, except one, recovered without relapse.

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PATHOGENIC YEAST-FUNGUS FOUND IN THE ORAL CAVITY. By W. D. Miller, D.D.S., M.D., Berlin, Germany. I wish to present a series of observations which I made some five years ago concerning a pathogenic yeast-fungus of the oral cavity. Untoward circumstances at the time interrupted the course of the experiments, which it has since then unfortunately been impossible to resume, for the reason that the cultures of the fungus in question had died in the meantime, and new cultures could not be procured. Although the work was for this reason not completed, it nevertheless led to some results which seem worthy of notice.

While making repeated tests of the secretions of the mouth by means of pure cultures, I frequently observed on the culture-plates large gray or yellowish to snow-white colonies, which on microscopical examination were recognized as colonies of yeast-fungi. A number of times I met with the same result in the case of diseased tooth-pulps; but I attached no particular importance to this observation until in cultures from two different pulps so many of these colonies appeared upon the plates that I was induced to investigate the matter more closely. The cultures, as well as the inoculations, gave results leaving but little doubt as to the fungus in question being closely related to if not identical with the Thrush

fungus, *Saccharomyces albicans*. It might therefore appear superfluous to dwell any longer upon this observation, the numerous investigations of late years having pretty thoroughly solved the questions regarding the biology of the fungus under consideration. Nevertheless, my experiments have brought out a number of points which will be of interest to bacteriologists as well as to dental pathologists.

In the first place the presence of yeast-fungi in suppurative processes could not fail to attract attention, as it was formerly generally supposed that this group of fungi—and in particular *Saccharomyces albicans*—was incapable of causing suppuration. The pure cultures in question again clearly testify (as has been claimed for *Saccharomyces albicans*) that a specific yeast-fungus may under certain circumstances develop forms which are liable to lead the observer into mistaking it for a mold-fungus.

In pure cultures on agar this fungus grows on the surface in large, snow-white moist colonies, which as they become older show a jagged edge; whereas under the surface the colonies with their numerous offshoots often present a certain resemblance to miniature bugs. In tube cultures it either grows in a granular form, without any peculiar characteristics, or it develops very fine, thread-like processes around the line of puncture, very similar to the *Wurzel bacillus*. On gelatin it grows well without producing liquefaction.

Rather remarkable growths are produced when in line cultures on glycerol-agar or gelatin the air is excluded by means of large cover-glasses. Especially those colonies near the border of the glass throw out numerous offshoots, which, by divisions and ramifications, produce very graceful figures. In gelatin cultures I have observed that these ramifications were all directed toward the border of the cover-glass.

Cover-glass preparations of such colonies showed diverse forms—round, oval, cylindrical, as well as such that had developed into long threads. In bouillon cultures only specific yeast-fungus cells were to be found. A two-days' old culture on potatoes showed round and oval forms, with numerous buds; after five days a number of cylindrical cells had developed, many of them showing granular degeneration, as was also the case in older cultures on agar. In cultures on bread I found only oval and cylindrical forms.

A watery emulsion subcutaneously injected into a mouse caused

death in forty-eight hours. There was no noteworthy reaction at the point of infection, nor were there any fungus-cells to be found in the blood, whereas there was a pronounced colonization in the kidneys and in the liver, as well as several nodules in the lungs. In the kidneys the colonies, especially directly beneath the capsule, were so numerous that these organs appeared literally studded with small white specks. The microscopical examination showed—in those parts where a stronger accumulation of fungi had taken place—necrosis of the epithelium of the urinary canals and their obstruction by a homogeneous matter, as well as a cellular infiltration of the interstitial tissue.

A second mouse, also subcutaneously injected, showed decided symptoms of a general infection for two days, but then recovered and was killed on the fifth day. A small abscess was found in the wall of the left ureter, in which yeast-fungi were present in considerable numbers. A third mouse presented the same symptoms. On the sixth day a bean-sized abscess was discovered at the point where the injection had been made, containing numerous round and elliptical yeast-fungus cells. The microscopical examination of the pus revealed the presence of only yeast-cells. Cultures on agar also developed only yeast-fungi. In a fourth mouse, infected in the same way, a pronounced fibrinous exudation was produced at the point of infection, but there was no suppuration.

We conclude from these observations that the questionable yeast-fungus not only possesses invasive qualities, but, under certain circumstances, brings about suppurative processes. Similar conclusions were arrived at by Busse in the study of a yeast-fungus, designated by him as *Saccharomyces hominis*.—*Cosmos*, Feb. 1900.

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ARTICULATION. By Dr. G. B. Snow, Buffalo. Read before Union Meeting at Rochester, Oct. 25, 1899. The teeth, and the jaws into which they are inserted, may be considered as a mechanism intended for the comminution of food, which is thus put into condition to be more easily acted upon by the fluids of the stomach and digested. The teeth are attached to the jaws by means of the alveoli, and are brought into contact as the mandible approaches the maxillæ; and substances suitable for food, when placed between them, are crushed by the operation of the masseter and temporal muscles, thus performing the function known as mastication.

To obtain a clear idea of the manner in which this function is performed, it will be necessary to consider the form of the mandible, the character of its joints, the different movements of which it is capable, and the forms and disposition of the teeth by means of which the function is more directly performed. The mandible consists of a U-shaped body, a ramus rising obliquely on either side, terminating with the coronoid process in front and the condyle at the rear; the latter articulating with the glenoid fossa of the temporal bone. Interposed between the condyle and the fossa is the interarticular cartilage; thin in its center, thick at its edges, more especially at the rear, with synovial sacs above and below. The lower sac allows the hinge-like movement of the mandible, while the upper one gives movement upon the eminentia articularis, and allows the cartilage and condyle to move directly forward. This movement is executed by the contraction of the external pterygoid muscle, which has its origin on the pterygoid plate of the sphenoid bone, and passes outward and backward to its insertion, partly in the neck of the condyle and partly in the edge of the interarticular cartilage. The cartilage, when applied to the condyle, has its upper surface nearly flat, so that the forward movement of the joint is in practically a straight line, diagonally forward and downward. As the prominence of the eminentia articularis varies in different individuals, and even to some extent at different sides of the same jaw, the amount of obliquity of the movement also varies.

The movements of the mandible are as follows: The direct, hinge-like movement, as when the mouth is opened. The movement of protrusion, when both of the external pterygoid muscles contract simultaneously, and the condyles, with the interarticular cartilages, are pulled forward upon the eminentia articularis. The lateral movement, when one of the condyles is brought forward, the other rotating in its socket, and the mandible is thrown to one side. Or by the alternate contraction of the external pterygoid muscles this movement may be made bilateral; in which case each condyle moves forward alternately, and is then retracted to its normal position, the mandible passing to and fro past the median line. This movement when compounded with the first constitutes the movement of mastication, the teeth being brought together with a lateral or grinding movement.

It is interesting to note that all species of animals do not possess

the lateral movement of the mandible. In the carnivora, the dog or cat for example, the condyles of the mandible are almost directly in line with the grinding surfaces of the teeth, and the movement is ginglymoid or hinge-like only. The herbivora, on the contrary, have well-developed rami and the condyles are set well above the teeth, and there is a very free lateral movement to the mandible.

The teeth are arranged in either jaw in the form of an arch; the incisors, cuspids and first bicuspid presenting a circular outline, the second bicuspid and molars running backward in diverging and nearly straight lines. The lower incisors are arranged on a smaller circle than the upper ones, and when the teeth are in contact they usually pass upward for a short distance behind the upper incisors, and are thus enabled to exert a shearing action in biting off morsels of food. This peculiarity is known as the "overbite" and is variable in extent. The bicuspid or two-pointed teeth come next to the cuspids, their cusps being quite long and sharp; and after them the molars or multicuspid, the length of the cusps of these teeth diminishing gradually from front to rear.

These peculiarities are to be noted when the teeth are brought together. The lower incisors being narrower than the upper, the lower bicuspid is about half a tooth in advance of the upper ones; the second lower bicuspid being central to the space between the upper bicuspid. The teeth of one jaw interlock with those of the other, their cusps being received into the sulci of the opposing teeth, or the interdental spaces. The articulating surfaces of the teeth form a curved line; convex in the upper jaw, concave in the lower; the curve sometimes rising quite rapidly at the rear. There appear to be two reasons for this arrangement. If the teeth were set in a horizontal plane the second and third molars, approaching each other at an angle of nearly 45° , would have too much of a sliding movement. They are accordingly set with their articulating faces in a curve, which enables them to meet more squarely; the rise of the curve at the rear bringing their faces more nearly to a right angle with the line of movement. Then, again, when the mandible is thrown to one side and the teeth are brought into contact the cusps do not rest in the sulci and the jaws are slightly separated. The condyle on the side from which the movement is made has moved forward upon the eminentia articularis and is consequently

somewhat depressed. The bicuspid on this side are thrown out of bearing, but the inclination of the faces of the molars enables them to touch; so that the bearing of the teeth will be on the bicuspid on the side toward which the mandible is thrown, and the molars on the side from which movement is made, which side moves forward as well as sidewise. The food is usually placed between the teeth on the side toward which the mandible moves, and is crushed by the returning sweep of the mandible. This arrangement of the teeth does not obtain in every case, but with the majority of well-arranged, well-developed natural dentures some of the teeth on both sides of the mouth will come into contact during the lateral swing of the mandible.

It is laid down as a rule that when the teeth have long cusps the incisors will have the more overbite, and the compensating curve, as it has been termed, will be greater. When the cusps are less prominent the overbite is less, the compensating curve is flatter, and the lateral movement of the mandible more free, as the eminentia articularis will in this case be less prominent.

What deductions can be made from the case, as above presented, relative to the articulation and arrangement of artificial dentures? In the first place, we must remember that the conditions existing when the natural teeth are in place are widely different from those which pertain to their artificial substitutes. In the one case the teeth are set in the alveoli, forming practically part of the jaws, while the substitutes have but slight attachment, the upper plates by adhesion, the lower generally by gravity alone; the latter being notoriously unstable. If we attempt the use of teeth with long cusps and long overbite we shall have conditions favoring the exertion of lateral forces upon the plates and they will be dislodged. The cusps of artificial teeth should therefore not be so long as those of the natural ones. The proportioning of the opposing sets is a matter of considerable importance. The upper and lower teeth should be of such width, relatively, that the bicuspid will come into their proper places and interlock, the same as in the typical natural organs. If they do not do this, and the cusps touch upon inclined surfaces, there will be a tendency to slide the plates upon the gums and they will be easily dislodged. The teeth must rest upon their opponents so that plates will be pressed directly home against the gums without developing any tendency to slide.

But how about their contact when the mandible moves sidewise in mastication? If the teeth are so arranged that they make contact only on one side at such a time, there will obviously be a tendency to tip and dislodge the plates. They must be arranged to copy nature, so that some of the teeth may be in contact on both sides of the mouth during all the masticatory movements; so that when the incisors meet edge to edge the molars will touch and prevent the dislodgment of the plates at the rear. When the side movement is made and the bicusps of one side touch, the molars of the other side should also touch. The plates, being held up at two or more points, cannot fall.

In setting up the teeth it is usual to first arrange the upper ten teeth in front, they being the most conspicuous; and there is the opportunity for the exercise of considerable taste in adapting them to their surroundings. If the incisors and cuspids are all set up alike, like the pickets in a fence, the effect will not be pleasing. The fact is that in sets of natural teeth there is an irregularity about their regularity. Each tooth has its peculiar way of standing in the set, and this gives the character and pleasing effect. There is a variation, of course, in different sets, but there are a few general rules which, if observed, will enable the dentist to get rid of the artificial appearance so often seen in his work. For instance, the central incisors usually stand with their cutting-edges slightly projecting, the bodies of the teeth being parallel. The lateral incisors have a little more inclination, and converge from above downward, the tips of their roots being farther apart than their cutting-edges and a little farther back than the tips of the roots of the central incisors. This peculiarity is the cause of the flattening of the alveolar plates, which has been given the name of the incisive fossa by anatomists. The cuspids are set more nearly perpendicular than the incisors, the roots being thrown out so that they form a prominence which is known as the cuspid eminence. To get the most pleasing effect these points must be remembered and artificial teeth must be set up accordingly; the central incisors with their cutting-edges rather prominent, the laterals with more inclination from front to rear, the bases diverging slightly, and the cuspids nearly perpendicular and full and prominent at the base.

The bicusps are next set up, their necks being kept well in, allowing the cuspids by their prominence to shield them from view.

Attention must also be paid to the positions of the teeth as regards the alveolar ridge, and they should be set as nearly directly over it as the case will admit, so that the bearing may be directly on the ridge and not behind it. The lower teeth next receive attention, and instead of beginning with the central incisors, as before, the second bicuspid is first set up. These have their place, the points of their cusps being directly under the interdental spaces of the upper bicuspid. This insures the proper interlocking of the two sets, and is the important point. The cusps and incisors are next arranged, the cusps having considerable prominence at the necks; the incisors, unlike the upper ones, being set up picket-fence fashion. After this come the second lower bicuspid and the molars. These are easily placed so they will come into proper apposition when they are brought together in the articulator, the latter being supposed to have only the open-and-shut, hinge-like motion; but it will be difficult to tell what the effect will be in the mouth, with the various movements of the mandible. Before the teeth can be articulated with any certainty of keeping contact, sufficient to prevent dislodgment of the plates under all ordinary circumstances, two conditions must be obtained. We must be able to imitate with a fair degree of accuracy, with the articulator, the movements of the mandible. We must have the models so set in the articulator that they are in the same relations to its joints that the alveolar ridges are to the temporo-maxillary articulations. Though this latter condition is not usually complied with, a moment's reflection will show its importance. The movements of the mandible are made from the two condyles as centers, and each point in the articulating surfaces of the teeth moves in its own direction, according to its location. If the models are wrongly placed in the articulator the movement of any particular point will not be the same as in the mouth.

As an instance to prove this assertion we may consider what is usually termed "opening the bite." The usual operations incident to the construction of the plate have been gone through with up to the arrangement of the teeth, and when they are tried in the mouth it is found that they will be better if they are brought down a trifle and the jaws separated a corresponding amount. The adjusting screw of the articulator is raised to separate the models as much as may be necessary and the teeth rearranged; but when they are tried in the mouth the articulation is found to be wrong. This state

of affairs has been experienced so often that it is a common saying that if the bite is changed in the articulator the teeth will not articulate properly when placed in the mouth. The reason for this is that the jaws of articulators are usually too long, and the models are consequently set too far from the centers. Then the height of the center of motion above the articulating plane, if it may be so called, is seldom thought of and is disregarded when the models are set. When the models are set too far from the center and the bite is opened, the teeth when placed in the mouth will touch at the second molars only, and considerable grinding must be done before they can be used at all.—*Cosmos, Jan. 1900.*

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STORAGE BATTERY IN THE DENTAL OFFICE. By G. E. Lob, M. E., Chicago. Read before the Chicago Dental Society. A brief description of the construction of the storage cell or accumulator, and the principle upon which it works, will be in order. Electric cells, or when combined in any number so as to form a single source called electric batteries, are divided into two great classes: 1. Primary batteries. 2. Secondary or storage batteries. *Primary batteries* are generators of electricity through the chemical action which takes place between certain different substances when brought into contact with each other; and independently from any outside electric current. To make this plainer, take the simplest form of a primary cell, a glass beaker filled with water, to which has been added a certain quantity of sulphuric acid, into which a strip of copper and one of zinc have been set, and connect these two metal strips by a copper wire. Immediately a strong chemical action will take place, showing an electric current flowing from the copper strip to the zinc through the conducting wire. The chemical action is as follows: The water is decomposed into hydrogen and oxygen, the hydrogen collecting on the surface of the copper and the oxygen combining with the zinc, forming oxid of zinc, which then combines with the sulphuric acid, forming sulphate of zinc. The principal seat of chemical reaction is at the surface of zinc, which is consumed by oxidation, while the copper acts as a conductor and is not consumed. Hence, since electric movement is from higher to lower potential, and the same law applies to the energy of chemical reaction, in common with other forms of physical energy, and since the electrical energy of the cell

is found to be strictly proportionate to its chemical reaction, it is assumed that the electric current originates at the surface of the zinc and flows through the fluid to the copper.

In the absence of external connection between the metal strips it is evident that the difference of electric potential would immediately become equalized and the current cease, but when they are connected by a conductor the current finds an outlet through the copper and flows back to the zinc through the external circuit; chemical action is thus sustained and the current becomes continuous. The law of the conservation of energy requires the expenditure of energy in one form as a condition of the production of the same amount in another form. Hence as chemical energy is the only energy expended in the battery, the natural conclusion is that it is the source of the electric energy or current generated.

Secondary or storage batteries are not generators of electricity themselves, but as their name indicates, only receptacles of electric energy, which is carried to them from an outside generator and stored in the cells in the same way as we store up solids or liquids in cans or bottles. Thus electricity is stored in a manner which is impossible with any other power. While stored the energy is dormant and can be retained for long periods with very little loss.

A storage cell consists of three principal parts—the plates, the electrolyte or liquid and the containing jar or box. The plates are divided into two kinds, positive and negative, and a set or group of these is commonly known as an element. The element is placed in a containing jar or box, which is then filled with a solution or electrolyte. The storage of energy in electric accumulators is accomplished by means of chemical action, produced in this case by the passage of an electric current through the element and electrolyte. The lead plates which form the element must be so constructed as to present a large surface upon which the chemical action may take place, as the amount of energy which can be stored in a cell depends upon the capability of the plates to take up the chemical action. This is termed the capacity of a cell.

The positive plates consist of lead upon which a coating or covering of peroxid of lead has been formed, while the negative plate is pure lead, the surface of which is of porous or spongy formation. The peroxid of lead and the spongy lead, respectively, are the portions of the plates which are subjected to the chemical action, and

are consequently called the active material. The electrolyte used with all storage batteries is sulphuric acid diluted with water in the proportion of one part of acid to from five to ten parts of water, according to the type of cell.

The positive and negative plates of each cell are arranged alternately in a group, all the plates of like denomination being connected together in multiple. Insulating pieces or separators are provided to keep the plates apart, so that when they are connected respectively to the positive and negative poles of a source of electricity the current can pass from one to the other only by flowing through the electrolyte.

As to the chemical reaction that takes place in a storage cell many different theories have been advanced, which would be too long to enumerate here. Joseph Appleton explains it thus: "The chemical condition of the plates and electrolyte differs when charged and discharged. When the cell is fully charged the positive plates have a coating of peroxid of lead, the negative being porous or spongy lead as described before, and the electrolyte is of its full strength or specific gravity. During discharge, that is when the positive and negative poles of a cell are connected through an external circuit, an E. M. F. is set up in the cell, a current flowing into the circuit from the positive plate."

The chemical action which takes place during discharge is as follows: The sulphur radical in the electrolyte enters into combination with the active material on both plates, forming sulphate of lead, the specific gravity of the electrolyte being correspondingly reduced. When all the active material has been acted upon in this manner the cell is discharged, for an equilibrium has been created between the two plates and the electro-motive force has fallen to zero.

When a cell is being charged the chemical action is reversed. The current enters the cell at the positive plate, passing through the electrolyte to the negative. The passage of the current through the electrolyte decomposes it, oxygen and hydrogen gas being given off. The oxygen is given off at the positive plate and converts the sulphate of lead into peroxid of lead again, the sulphur going back into the electrolyte; the hydrogen which is given off at the negative plate enters into combination with the sulphate of lead, reducing it to pure lead, the sulphur returning to the electrolyte and in-

creasing its specific gravity. This action restores both plates and electrolyte to the original condition of full charge. If the charging current is continued after the cell is fully charged, that is when all the active material has been converted to peroxid of lead and spongy lead respectively, no further effect will be produced except to decompose the water, the resulting gases pass off through the water, giving it a milky appearance. This indicates that the cell is fully charged. Continuing the charging current beyond this point, that is overcharging the cells at the proper rate, does no harm to the plates, but the energy represented by the current is wasted.

When the cell has been properly charged the positive plate is of a brown or deep red color, while the negative is a slate gray. Naturally the chemical action can take place only at a certain rate, depending on the amount of active material and the construction of the plates. If it is attempted to give to or take from a cell too much current the efficiency and durability are affected.

Generally speaking there are two distinct methods of preparing the active material of storage battery plates. One of these consists in applying mechanically some material to the surface or exterior of a lead-conducting plate or grid, which is either active itself or can be converted into active material by a process of electrical or chemical formation; the second method consists in treating or forming electrically or chemically the surface of a lead plate, which has been designed to present a large area to the electrolyte, whereby the surface is converted into active material. The first method is commonly known as the pasted type of cell, although the active material is not always supplied in the form of paste. The second method is known as the Plante type, so called because Gustave Plante, a French electrician, was the first to utilize practically the electrical method of forming the plates without the use of applied material.

The larger proportion of storage cells now in use are of the lead accumulator type mentioned so far, but there is a second class of storage cells made, which are called bimetallic accumulators, and whose elements consist of two different metals, the electrolyte being a salt of one of the metals. The principle upon which they work is the same as in the lead cells.

Naturally lead accumulators are very heavy, and this being a great objection to their use in certain instances, a combination of elements of less weight was sought for and the bimetallic cells were

produced, but they never have been used to any great extent. The electro-motive force in them is somewhat higher than that of the lead accumulator, but owing to the danger of local action on open circuit they will not retain their charge for more than a few days, while a lead accumulator will lose scarcely twenty-five per cent of its charge in as many months; besides, the tendency of reducing the weight of these cells must necessarily weaken their construction, and on this account their life will be much shorter. About two years ago a small battery of this class was shown at the different dental meetings in connection with a small mouth lamp, and special stress was laid upon its high electro-motive force and its small weight. The battery has disappeared from the market, and those who invested money in buying it have probably found out by this time that the whole appliance was a failure.

It will be seen from the foregoing description that the storage of electrical energy is entirely different from the storage of any other form of energy. A quantity of electricity cannot be stored or accumulated in a vessel or reservoir, because it does not exist in a tangible form. We are able, however, to make the electric current perform work in shape of chemical action, and afterward by setting up certain reactions can reproduce the current stored. So long as the materials used are free from impurities and the chemical action is continued until completed, there is practically no limit to the time which may elapse between the storage of electricity with its contingent chemical action and the reaction which, practically speaking, sets free again the electrical current.

Having considered the principles upon which the storage of electrical energy depends and noted the various elements which are necessary to make up the complete cell or storage battery, we will examine its application with special reference to dental practice. The first and most common application of the storage cell in dental offices is to furnish the necessary power to run the dental motor, where no day or other current can be obtained. In order to keep the number of cells necessary to produce a certain amount of power, required for this kind of work, as low as possible, special-wound motors must be used, which will work under a very small pressure. The unit of power in all electrical problems is the watt, which is equal to the voltage of electro-motive force multiplied by the amperes or intensity of current. 746 watts represent an electrical

horse power. To produce such a horse power, or any fraction of it, it will make no difference if the voltage is high and the amperage low, or vice versa. 92.25 watts or $\frac{1}{8}$ horse power may be produced by a current of 110 volt pressure with only 0.85 amperes, or by 4 volts with 23.34 amperes, or any other combination giving the total of 92.25 watts, provided a motor can be constructed whose windings will be able to carry the current and at the same time offer sufficient resistance to the pressure, without being too clumsy in appearance.

Therefore the resistance and carrying capacity of the wire on the motor are the main points to be considered. Necessarily with a low voltage the wire must have a large cross sectional area in order to carry a current of high intensity without overheating the conductor, but as such a heavy wire has also a very low resistance and quite a large number of feet will be required even for lowest voltage, practical reasons forbid us to go in the construction of a battery motor beyond certain limits. Now the question arises, what power is actually needed to run a dental engine? I know that the large majority of dentists are laboring under a very wrong impression with regard to this point. Their judgment being based on the ratings and sizes of the ordinary motors coming under their eyes, most of them think that about one-fourth horse power would be needed for a cord outfit and laboratory work, and perhaps one-eighth horse power where the power is taken directly from the armature shaft. The reason for this is, that nearly all the small motors on the market are highly overrated and when it comes to an actual test the power developed will produce only fifty per cent or less of the indicated power. If the electrical motor is properly constructed, about one-sixteenth horse power will be sufficient for cord outfits and the running of a lathe head, and one-fiftieth horse power for a motor connected directly to the cable and handpiece. Of course the latter form will be the most preferred where a storage battery has to be used, as being the most economical on account of the smaller number of cells needed.

The next application of the storage battery in dentistry is to furnish light and heat, and in both cases more satisfactory results are obtained than from any other source of electricity. The small mouth lamp or the somewhat larger mouth illuminator will give a steadier light and will last longer than when operated from an in-

candescant light circuit through a rheostat, or from primary cells, as the current is of absolute uniform flow and no burning out of the lamps and going down of the light can occur through variation of pressure. Heating instruments, such as root driers or hot-air syringes where with a low voltage a current intensity of not over two or three amperes is required, may be as well operated from the incandescent light current through a rheostat as from the storage battery, but the electro-cautery, where with the low pressure a current intensity of from eight to twenty or more amperes is needed, cannot be served through a rheostat, and only a motor generator—a quite expensive machine—or the storage battery will answer.

Outside of the before mentioned apparatus and instruments, the battery can be used for any other purpose where the electric current is wanted, provided its cost is not too high, and the same result can be obtained in a cheaper way, as for instance in cataphoresis.

The efficiency of a battery depends to a great extent upon proper selection of the cell best suited for the work required, its care and maintenance. In the early days of storage battery work this was ignored, and many of the failures which have been recorded are traceable to this account. The general practice was to consider a storage battery simply as a piece of apparatus to store up electrical energy for any purpose, irrespective of the character of the work, the classification being nothing more than good, bad or indifferent, with very little of the first. Modern practice has, however, changed this and it is at last understood that there are many types of cells, and that a cell which can run a small motor need not be the one which should be used for heavy cautery work or to run a large motor.

In the dental office selection of the cell depends in a large measure upon the way it can be charged. Where a commercial current can be brought into the office and the charging can be done as often as desired, a cell of fifty ampere hour capacity will be sufficient for small motor work. If a larger lathe motor and heating instruments are used, larger cells of about double the ampere hour capacity will be needed. Usually portable batteries in covered wooden boxes are preferred on account of their neater appearance, but from a practical point of view the open glass jar is by far the better, because its contents are always open to inspection and the condition of plates and electrolyte can be watched.

The cells should be placed in a dry, well ventilated place, not too near any heater and not over twenty feet from the apparatus operated by them, and the conducting wires used must be as heavy as possible to reduce their resistance to the flow of current. This is a very important point to be observed, as many batteries which did not furnish sufficient current to give the motor its full speed, were found upon inspection to be placed in a distant cellar or laboratory connected to the motor with ordinary No. 16 or No. 18 lamp wire; while when this was replaced by No. 10 or No. 12 wire the motor worked perfectly.

In dental practice the storage battery should not be removed at all. The old method of sending out storage cells to be recharged at the electric light station or any other electric plant is impracticable and in most cases disastrous to the jar and plates. If the expressman handling the cells does not break them, the "expert" electrician, especially in small towns, has very little if any knowledge of the charging of storage cells, and either by reversing the poles or by sending too strong a current through them will destroy a battery that with proper care and attention probably would have done good service for several years. For the above reason storage batteries should be charged right in the place where they stand, and the charging current brought to them, so that it can be done without their removal. This brings us to the question, which current is suitable for charging storage cells and how it is to be done. Only a direct continuous current can be used for this purpose, such as furnished from a direct incandescent or arc light circuit, from a small dynamo, a primary battery or a thermo generator.

No charging can be done from alternating currents. In charging an accumulator only a small part of the E. M. F. required to force the current through the cell is expended in overcoming the resistance of the plates and electrolyte; the remainder is expended in overcoming the E. M. F. of the chemical action of the cell. It follows then that if the applied E. M. F. be just equal to the E. M. F. of the cell no current will flow, so that the E. M. F. of the cell itself may be considered as a counter E. M. F. opposing that of the charging current—in other words, the E. M. F. of the charging current should be about twice as high as that of the cells to be charged. On the other hand the amount of current charged per hour should not exceed what is called the normal charging

rate, and which differs according to the size of cells. The normal rate of charge for small accumulators is about ten hours, and if the cell has a capacity of fifty ampere hours not more than five amperes should be charged, or ten amperes for a 100 ampere hour cell. Thus in using a direct incandescent light circuit its voltage must be cut down by interposing the proper resistance in order to bring the current to the normal rate. This can be done either by a rheostat or by a bank of incandescent lamps connected in parallel, in series with the main circuit. Every sixteen C. P. lamp will allow about one-half ampere of current to flow and ten such lamps connected in parallel will furnish a charging current of five amperes. Of course there is no harm in charging at a lower rate than the normal, if the great number of lamps should be any objection to the operator, or to use fewer lamps of higher candle power.

With the arc light circuit, where the arc lights are connected in series with the main line and only a fixed amount of current is flowing, no special resistance is needed, as the storage battery is simply connected in series with the line the same as all the arc lamps.

In case the current on such a line should be in excess of the normal charging rate, which would be damaging to the plates, the battery should be connected in multiple; that is, all its positive plates to one end of the line and all its negative plates to the other. Thus the large current is divided through the battery and each cell instead of receiving the full amount of current will only receive its pro rata.

Very few dentists will ever use small dynamos to charge their storage cells with, as the first outlay for such an equipment is quite expensive and requires a good deal of attention.

To charge accumulators from primary cells, where no commercial current is available, is perhaps one of the simplest and also cheapest ways of doing. Only primary cells, which will be able to deliver a steady continuous current for any length of time, can be used for this purpose, and among them the so-called gravity cell in its different forms is the best. This cell will deliver a very steady current of a low intensity as long as the chemical action is kept going, and therefore it can be left connected permanently to the storage battery. All the attention needed is to replace the absorbed copper

sulphate about once a month and the zincs about every six or eight months according to the type of cell used. When white salts begin to creep out on top of the cells this is a sign that the solution is oversaturated with zinc sulphate, and part of it should be taken out from the top of the cell, without disturbing the solution too much, and be replaced by clean water. If these points are carefully observed the primary battery will furnish a very satisfactory charging medium, which renders the dentist absolutely independent from the exactions of electric companies, especially in small towns.

The gravity cells deliver a current of about three-eighths ampere, and when connected permanently to the storage battery will charge about nine ampere hours in twenty-four hours' time. If this should not be sufficient for the work to be done, another series of primary cells of the required voltage can be added, which will double the amount of current charged.

The use of thermo-generators in connection with the storage battery is comparatively new in this country, although they have been used quite successfully in Europe for this purpose for the last ten or twelve years. As the name indicates, in such apparatus the current is generated by heat, the instrument consisting of a large number of thermo-electrical pairs (strips of two metals of different coefficient of expansion and electric affinity), connected together in series in such a way as to expose the inside or half of all the joints to heat, while the other half or outside is kept cool. Thus by the difference of temperature between the two joints of each pair a small electromotive force is generated, which will increase with the number of pairs or elements connected together. Owing to the very small E. M. F. generated at each joint and the high internal resistance, quite a large number of pairs will be required to produce pressure sufficiently strong to charge three or four storage cells. Naturally the cost of such thermo-generators will be high and their use limited to small batteries. On the other hand, the electric mallet, mouth lamp and even a small fan motor may be operated successfully direct from the apparatus, while the amount of current flowing will not be strong enough to drive a power motor direct, and the accumulation of current in the storage battery is needed.

In charging a battery the following points should be watched: Special care must be taken that the polarity of the charging current is right. The positive pole of the battery must always be con-

nected with the positive pole of the charging source. The voltage required to charge should be at least fifty per cent higher than the combined voltage of all the cells in the battery, assuming for each cell an E. M. F. of two volts. The rate of charge should be preferably kept at normal or under, as continuous charging at a higher rate than the normal will damage the plates.

In dental practice discharging until complete exhaustion is not advisable. Repeated recharging only for a few hours every few days will keep the battery in much better condition and preserve the plates much longer than a complete discharge and then a recharge. Besides, the operator being liable to forget that his battery is exhausted will let it stand so for a length of time and the plates will soon become seriously injured. A long series of tests has shown that the continuous discharging of storage cells below one and nine-tenths volts is liable to produce sulphating of the plates; and the nature of the chemical action being changed, it also leads to the distortion of the positive plate, which is known as "buckling." As the plates are located very close together in the cells to reduce the internal resistance, buckling is liable to cause the plates to touch, thus short-circuiting the cell.

The plates should always be completely immersed in the electrolyte. Evaporation will cause the electrolyte to fall below the level of the plates; this is detrimental and must be compensated for by the addition of water, as it is only the water which evaporates, the acid remaining in the solution. When adding water to a cell to make up for this evaporation it should be put into the cell through a hose or funnel reaching to the bottom, otherwise the water being lighter than the acid will remain in a layer on the top.

With a good modern storage battery very few troubles are liable to occur, provided proper attention is given to keep the regulation of the charge and discharge within proper limits and if the cells are properly supplied with electrolyte. The only thing likely to happen and cause trouble is the formation of short circuit between the plates, causing the cell to discharge through itself. The short circuit may occur either in the cells through the scaling or peeling of the active material, the pieces which become detached lodging between the positive and negative plates, or in the apparatus operated from the battery.

As soon as it is noticed that the battery will not hold its charge it

should be immediately examined for short circuits. The best way to do this is to probe between the plates with a thin piece of hard rubber, thus removing any material which may have formed a connection between the plates. If this will not stop the trouble and the electrolyte is covering the plate entirely, in most cases the short circuit will be found in the apparatus. One or two charges and discharges will soon bring the cells back to their original condition. To sum up what has been said before, all that is needed to keep a storage battery in good condition is a proper installation, a judicious charging with due consideration for the amount of the current taken out and a careful maintenance of the cells.

The storage battery of to-day is a practical and mechanical piece of apparatus. Engineers have come to the assistance of the chemist, the result being a well-designed and constructed apparatus, free from the weak points which were inherent in all early types of cells and which necessitated the constant attention of a skilled doctor or nurse.—*Review, Feb. 1900.*

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REMOVAL OF SUPERIOR MAXILLA AND PRESERVATION OF FACIAL EXPRESSION. By Dr. C. D. Parker, New York. Read before New York Institute of Stomatology, Nov. 1899. Assuming that an operation is necessary, the anesthetic to be used is the next important thought to be considered. I much prefer the use of local to general anesthetic in this class of cases, for the patient often gives me aid. In nine out of ten cases I use beta-eucain; generally a two per cent solution I find of sufficient strength. In fact, for seventy-five per cent of all ordinary operations I think it more satisfactory than anything I know of to-day. By using two per cent of eucain hypodermically, and waiting fifteen minutes, the anesthesia or analgesia is complete. This preparation is safer than cocain, notwithstanding the assurance given us that volasem is the antidote to counteract the latter's physiological action.

For all operations on the maxillary bones I do not find use for the bone-forceps or saw, especially in the upper jaw. I depend on the surgical engine and the instruments used with it, such as the trephine, drills, burs, and occasionally the bone-curet. Seldom is it necessary to use the knife or disfigure the face for removal of the maxillary bones, when one has been educated in the use of the surgical engine. With the aid of the periostotome the soft tissues

are separated from the bone and held out of the way, making the operation comparatively bloodless. Then with the engine and fissure drill the narcotic parts, such as in necrosis, are cut around and dislodged by the periostotome, as an elevator, or the slender root-forcep, that we are all familiar with. In case of caries cut around the supposed zone, and if not complete follow it up with the round bur till all the softened bone is removed. The great advantage in this method of operating is that you can cut ahead of you and not destroy laterally any more bony tissue than is necessary, nor scar the face, as is very often done to make room where the bone-forceps and saw are to be used.

Furthermore, what I consider an important feature in this work is that there are clean, smooth edges of bone, and with very little loss of blood. We have now reached a very important part of this subject which may be of especial interest to the dentist, that is, preserving the facial expression, which is so often destroyed by removal of the superior maxilla or a large portion of it. I have here a photograph which tells its own story, as the picture was taken with the artificial denture removed from the mouth. After suffering much pain for about three months his physician referred him to me for the removal of whatever necrotic bone was necessary from the superior maxilla. Caries was easily diagnosed, and I removed from the molar of the right side the alveolus, a portion of malar and frontal processes extending across to the left side, taking away the frontal, malar and alveolar process to second molar, as well as palatine process on both sides, leaving only posterior third.

It can be readily seen that most of the bones that fix and support the anterior facial expression were removed, and the usual result of such an operation is anything but pleasing to the eye in after times, by the sinking in of the nose and features in general. A method of preserving the natural facial expression in this class of cases, whether the operation has been large or small, is by the use of sheet-lead, so shaped as to restore, lift up, or hold out the face in its natural position, retaining it there until recovery is so nearly completed that it is of no further use or cannot be retained longer. The lead having been fitted in place, it is then removed and wrapped with at least one layer of surgical gauze, preferably boric acid, being careful to have the ends well covered if it is resisting much force, as the thin edges might irritate the soft tissues.

It is then placed in position, and with the fingers molded in its proper shape, the metal being soft and pliable enough for that purpose. The cavity is then packed with surgical gauze underneath the lead shield, being careful never to pack to the extreme bottom of cavity, for in so doing the new tissue is held in restraint and cicatrix formed. As granulation takes place the lead must be removed and made narrower, to prevent the new tissue that is forming from coming in contact with it in the bottom of the cavity. Repeat the cutting away of the lead shield from time to time, until the cavity is nearly or completely filled with the new fibrous or cellular tissue.—*International, March, 1900.*

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ANTISEPTIC AND DISINFECTANT PROPERTIES OF SOAP. The *British Medico-Chirurgical Journal* for September, 1899, has an article by Symes upon this somewhat homely but practical topic. With regard to the question, "Can germs live and multiply on soap?" he says that all soaps possess antiseptic properties in greater or less degree. The following experiments serve to illustrate this fact: (1) Fragments taken from the centre of a cake of soap by means of a sterile cork borer, and incubated in nutrient broth, were found in all cases to be sterile. (2) The hands were washed in hot tap-water with each soap; the tablet was placed on a clean surface, and cultures made from the soap at the expiration of three minutes. Those from germicidal and from scrubbing carbolic soap were sterile, and those from izal, toilet carbolic, lysol, and brown Windsor soaps showed growth of various organisms. (3) Small slabs of each soap were moistened and then heavily inoculated with a culture of staphylococcus aureus and kept in a moist hot chamber for two days. At the expiration of this time the surfaces of the brown Windsor, lysol and germicidal soaps were sterile, but scrapings from the others all gave rise to growth of the organism first inoculated. On none of the surfaces was there any apparent increase of growth, nor did he find it possible to grow moulds or bacteria on surfaces of soap kept under ordinary conditions. We may conclude, then, that organisms which get rubbed into a soap in the process of washing hands, clothes, or other surfaces, or which may settle upon soap from the air, are not capable of multiplication thereon. Of the soaps tested, this antiseptic property was most marked in that containing biniodid of mercury.

For practical purposes the second point—namely, the disinfectant value of soaps—is the more important. To test this the following method was adopted: A one per cent solution of each soap was made (this representing what the writer judged to be the strength of the solution which comes into contact with the hands), and to five cubic centimetres of this solution there was added a drop of a fresh broth culture of staphylococcus. The tube was then shaken and allowed to stand for a stated period, and then five drops of the mixture were added to a broth tube, which was incubated for forty-eight hours. Obviously, if the antiseptic property of the soap solution was sufficient to kill the organisms in the one drop of broth culture added, then the tubes inoculated from the mixture should be sterile; while if the solution had no antiseptic power, or if the time allowed was insufficient, then growth would occur.

Symes does not give the details of many experiments extending over several months, but simply states the result arrived at, viz., that tested in this way it was found that a one per cent solution of germicidal soap killed staphylococcus aureus in one minute, while the same strength of izal, toilet carbolic, scrubbing carbolic, lysol and brown Windsor soaps failed to do so in ten minutes, half an hour, an hour, or three hours. These solutions were, however, all sterile in from twelve to fourteen hours; the exact time in which this result was attained was not observed, nor is it of much importance, for under no conditions would objects be as long as three hours in contact with the soap.

It is a matter of some importance to note that all organisms are not affected alike by soap solutions. Thus the cholera vibrio, the typhoid bacillus, the bacillus coli, and the streptococcus are killed much more quickly, or by very much more diluted solutions, than are the staphylococci. For instance, the bacillus coli is killed by a two per cent solution of plain curd soap in from two to four hours. Our antiseptic precautions are, however, commonly directed against the more resistant organisms, the staphylococci, and therefore in testing the germicidal power of a soap it is preferable to work with these organisms. Symes has tested the germicidal soap with bacillus coli, bacillus typhosus, the cholera bacillus, streptococcus and staphylococcus albus, all of which were killed by admixture with a one per cent solution (equal to biniodid of mercury 1 in 5000) in one minute.

It may be concluded, then, from these experiments, that for practical purposes most of the so-called disinfectant soaps have no value, but that in the combination of biniodid of mercury with soap we have a useful means of disinfecting hands, instruments, surfaces, etc. Although a large number of trials were made, Symes did not succeed in sterilizing his hands by washing with the soap containing biniodid of mercury, although much better results were obtained with this than with any other variety. This points to the necessity of the operator first washing his hands and then soaking them in an antiseptic solution.

It has been thought that the germicidal action of soaps is due to their alkalinity, especially to the free alkali present. Symes does not think that this can be the case, for Dr. Munro, from a careful analysis of the samples tested, found that the difference in the amount of free alkali is infinitesimal. Moreover, he obtained no better results with soaps with high total alkalinity than with the others.

Although the exact combinations formed are not known, there are many observations to prove that certain antiseptics when mixed with soap partly lose their power. This is certainly the case with carbolic acid, lysol, and izal. Rideal, who has done much work on this subject, considers that for an antiseptic soap an olein base is the best. Superfatted soaps are in his opinion not so suitable vehicles for antiseptics as soaps with a moderate excess of alkali. The presence of free fat or oil strongly militates against germicidal action—witness Koch's discovery that carbolized oil has no antiseptic value. Acids and free halogens are incompatible with the fat. Boracic acid is converted into sodium borate and most mercury salts into insoluble mercuric oleate. Oleates do not generally mix well with soap; fluorids, sulphates and oxids give better results. Rideal found the double iodid of mercury and potassium to mix well and form a good antiseptic with soap, compatible with strong alkalies and not precipitating albumen. In composition this resembles the soap with which were obtained the best results.

In conclusion, Symes points out that the matter is one of considerable importance with regard to nurses, attendants upon sick persons, and the general public, who may be led to think that in using so-called antiseptic soaps they are insuring efficient disinfection. There is also an economic side of the question, for most soaps im-

pregnated with chemical disinfectants are much more costly than plain soaps, though as disinfectants they are of no greater value.

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INFANTILE SCURVY, WITH REPORT OF A CASE. By Dr. E. H. Babcock, Brooklyn. Read before Second District Dental Society, Dec. 1899. Two reasons influenced me in the selection of this subject: The first was, that owing to the appearance in the mouth of one of the earliest and diagnostic symptoms, the dentist might often be the first to recognize the trouble, thereby saving the physician and parent much anxiety, and the little patient much suffering. The second was, that owing to the comparatively few cases reported, the subject is less well written up and consequently of greater interest, especially so to the writer, as he has happened to meet with a case that differs materially from most of the cases already reported.

Billings defines scurvy as "A disease characterized by anemia, general depression, hemorrhage from mucous surfaces, a purpuric eruption, and inflammation of the gums with loosening of the teeth." Dr. W. Gilman Thompson says: "Improper diet is unquestionably the exciting cause of scurvy in nearly all, if not all cases; but in attempting to define wherein the dietetic error consists one is met by very conflicting facts, and the conclusion must be reached that neither the presence nor absence of any one food or any special class of foods is invariably productive of scurvy. Among the chief dietetic errors which have been believed to produce it are: Excess of salt meat and fish, exclusive meat diet, tainted food, badly cooked food, too much fat, lack of fresh vegetables and fruit, a too monotonous diet, and, in infants, absence of fresh milk."

This disease is found among the children of the rich as well as those of the poor, but the singular and unusual fact is that it is more prevalent among the former than the latter. This is easily understood when we consider how differently the children of the extremes of society are fed. The poor child is generally suckled by its mother and, whether suckled or bottle-fed, is taken to the general table and eats what the older members of the family have, thus getting sufficient variety to counteract any lack in the milk supply. The child of the rich is suckled, if suckled at all, for only a short time, and then handed over to a nurse to be bottle-fed. Up to 1883 this trouble had been diagnosed as "acute rickets." At

that time two English physicians, while making post-mortem examinations on the bodies of two fatal cases, discovered the true nature of the trouble and decided that the disease was scurvy, not rickets.

It is my opinion that this trouble will become more common, owing to the fact that many of the mothers of to-day are not strong enough to suckle their children; while many of those who could, will not be bothered or are too busy with social affairs to give the child the required time and attention. The child, if strong and healthy, is given cow's milk and may thrive; but if its digestion be poor it is put on some one of the proprietary foods and is likely to be attacked with scurvy. It does not seem quite fair to condemn all the proprietary foods. They are mostly predigested and are given to children that have weak digestion, and who would die if just such foods were not obtainable. These foods have their limitations, and when a child reaches a certain age, differing with each individual, supplementary food should be given.

Diagnostic Points.—First age: occurs usually between six months and two years. Second history: generally a record of improper feeding. Third: Swollen and painful extremities. Fourth: stringy, purple gums, bleeding easily. Where teeth are not erupted the gum lesions are absent. Fifth: in severe cases, eyelids become swollen, black and have appearance of "black eye."

Morbid Anatomy.—Hemorrhage beneath the periosteum is the typical feature. The femur and tibia are the bones most frequently affected; the fibula but rarely. The shaft of the bone near its epiphysis is the point of most tenderness. The joints are usually normal. Deep-seated muscles are frequently the site of extensive extravasations of blood. Superficial muscles are thin and pale, owing to the serious infiltration. "Infantile scurvy may be mistaken for rheumatism or paralysis; less frequently for rickets, osteitis and purpura." Prognosis is good if recognized early. Recovery is rapid under proper treatment. Death has happened where trouble was unrecognized. Lesions of rickets are found in the bones and are permanent; while those of scurvy are evidently in the blood, and rapidly disappear under treatment. Rickets predisposes to scurvy.

General Treatment.—Stop the use of all proprietary foods and condensed milk. Give fresh cow's milk, beef juice, orange juice or other fresh fruit. If over six months, add sieved baked potato.

to its food. There is considerable difference of opinion as to whether boiling of the food is injurious or not. As the child improves less of the milk or other antiscorbutic food will be digested. Later, iron, cod-liver oil or other tonics may be given.

Local Treatment.—Gums: avoid use of nitrate of silver or other irritant. Diluted orange juice, to which glycerin has been added, is recommended as an application. Limbs: cold compresses if there be much pain and swelling. Avoid massage or other friction. Limbs should be moved with great care, as there is danger, in severe cases, of spontaneous fracture of the shafts of the long bones. Scorbutic children should be protected from sudden changes of temperature, as they are specially liable to contract bronchitis and pneumonia.

Case in Practice.—Last January the mother of a little ten months' old girl asked me to look at the child's gums. She had four upper and four lower incisors. The gums above the upper incisors were swollen and of a deep purplish color, as though they had been badly bruised. Gums around lower teeth were unaffected. A mouth-wash rapidly cleared up this trouble. The child had never been very strong, but was well and plump.

One night about a week after this she cried for a long time, and when taken up her feet and hands were icy cold; the hands seemed much swollen. The furnace fire had been allowed to become very low and the temperature of her room fell to forty-five degrees F. Her hands were bathed in cold water, then dried and very gently rubbed to bring back the warmth. The following day she seemed better, but cried out if touched. Any attempt to straighten out her legs, which she kept drawn up toward her abdomen, would cause a cry of pain.

A physician friend to whom I mentioned the case said, from my description, he judged it was rheumatism. I did not agree with him, giving as my reasons the facts of no rheumatic history in the family, child under one year of age, and surroundings the best. Afterward I asked Henry Wallace, M.D., to see her, and after a careful examination he made the diagnosis of "infantile scurvy." He suggested meat juice, orange juice, change from sterilized milk to milk heated only to about one hundred and sixty degrees. The child improved rapidly. Her teeth were erupted on time and with but little disturbance to her health or temper. She was backward

in the matter of walking and talking. At the present time, almost a year later, she talks some and walks nicely alone.

What deceived me in the matter of making a diagnosis were the facts that she was plump and seemingly well; she was fed on milk and allowed to have bread crusts; her home was in a suburb of the city, being well lighted, ventilated and heated; the gum trouble was limited to the upper jaw and disappeared upon the application of an alkaline mouth-wash. Her food consisted of Borden's milk (not condensed), two parts; water, one part; six tablespoonfuls of cream, to which was added Peptogenic Milk Powder. The whole was stirred, and being heated for ten minutes was removed from the stove just as it began to boil.—*Items, March, 1900.*

* * *

GOLD FILLINGS IN ARTIFICIAL TEETH. By Dr. S. M. Weaver, Cleveland. The idea in filling false teeth is to get rid of that "horrid false tooth" look of which the patients are very likely to complain. After the tooth is selected and ground to fit in the proper place, it is placed in the mouth and the shape of fillings in natural teeth are noticed carefully and the same is reproduced in the artificial tooth by grinding straight through the porcelain facing with a small round-cornered corundum wheel; when this is of the proper shape the margins are polished with a fine stone, the same as in a natural tooth. A gold backing of 24k, 32 gauge, large enough so that it can be burnished up into the cavity, which can be done with the shank of a small round instrument, is placed on. The surplus gold is then trimmed off, leaving enough extra to extend a trifle above the margins of the porcelain. A platinum backing of 32 gauge is placed over the gold, allowing it to extend out straight with the contour of the teeth, leaving it slightly flush. The pins are split to hold backing in place. There is now a V-shaped space to be filled in with 22k. gold; to do this, place the tooth in a pair of self-holding soldering pliers with a small piece of asbestos over the porcelain to keep the oxid of iron from staining it. Wipe the cavity with a very little borax cream and hold above the Bunsen burner, porcelain side down and then gradually carrying it into flame; when the facing becomes red hot turn it over and place the small pieces of gold already prepared into the cavity, taking pains to warm them in the flame before touching the tooth, as the chill might check the facing; care must be taken not to remove it from

the flame until the soldering is complete. Next place the brush flame of the blow-pipe on and melt down the gold gently, being sure you have enough material on to restore the contour. To prevent possibility of checking throw it into some plaster and allow it to cool. When cool grind and fit the case and you will have the former tooth reproduced in detail. This method can be used in crown, bridge and plate teeth. — *Ohio Jour., Feb. 1900.*

* * *

BOER AND HIS DENTIST. A correspondent who has lived many years in South Africa sends us the following: The Boer is a constant sufferer from two ills—indigestion and toothache, and the one is the outcome of the other. He endures the indigestion with comparative cheerfulness; his father and mother had it before him, and why should he not have it also? But when the toothache arrives and gets in its fine work his philosophy vanishes, and he incontinently caves in; and this is where the 'traveling dentist' comes in. It is a peculiarity of the Transvaal that most professions and trades have their exponents who travel from one end of the country to the other, offering their services to all who may require them, and in this category the dentist takes a prominent part. The men who follow this calling embrace in their ranks representatives of all classes of industry; many of them have at times served in Her Majesty's forces—none of them has any right to ally himself with the profession; but the Boer asks no questions and so this little discrepancy does not matter. These men travel round the country districts, as a rule mounted on some ill-fed, weedy horse. Their stock-in-trade consists of some pairs of forceps, a stock of remedies, and an abnormal amount of what our American cousins denominate "push." They travel from farm to farm until their services are required. When a Boer gets the toothache everyone in the neighborhood knows of it. The news is generally carried round by the Kaffir or Hottentot servants, who have sought safety in flight, for on such occasions the Boer invariably relieves his feelings by knocking smoke out of everything black that comes within his reach. The dentist will be told that Oom Jantze, who lives behind the little red kopje, has got a toothache and his Kaffirs have run away. On the receipt of this news the professor of the healing art will inquire the way and set off post haste to relieve the afflicted one. On his arrival at the farm he is welcomed by the rest of the family and

terms are arranged. This will take some time, because there are no standing fees, and each side will endeavor to get the best of the bargain. The victim himself will often join in the discussion and try to lower the price by saying, "It's a small one and the pain is getting better. Perhaps I need not have it taken out." This talk, however, is always recognized as mere padding by the dentist and little notice is taken of it. After the bargain is struck the operator extracts the tooth (some of these men are fairly skillful), and the money will be paid. The dentist's work is not over, however, when he has pulled out the offending molar and handed it to the sufferer. He now unpacks his wallet and produces his stock of remedies, and dilates on the fearfully infectious nature of toothache. "You will all have it," he will cheerfully remark, "everyone of you. You (pointing to the vrow) will be lying in that chair shrieking with pain before this day week. You (turning to the daughter) will have your face swollen to the size of a rotten pumpkin in three days' time unless you take something to drive it away;" and then he will produce the one infallible remedy, and as a rule prevail on every adult member of the family to lay in a supply. If the day is still young the dentist will continue his journey; if it is verging towards evening he remains at the farm for the night, a hospitality which is always freely accorded. One advantage of this migratory life is that a man can live free of cost, because the Boer will not accept pay for entertaining a traveler. He will, however, charge for any supplies the horse receives, and this accounts for the usual well-fed condition of the man and the air of starvation which invariably hangs over his steed. Some of these men have regular beats which they visit from time to time and where they are well known. They are a jovial, happy-go-lucky crew. They make money easily at times and spend it equally freely. When "things are bad," they philosophically incline to the old saying that the sun cannot shine every day, and hope for better luck on the morrow. There is not much doing in this particular line to-day, but they will turn up smiling again when the war is over.—*Dental Record, March, 1900.*

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ABSORBENT MATERIALS. By S. A. Hackett, D.D.S. Read before Oakland (Cal.) Dental Club, Jan. 3, 1900. In filling teeth we need to remove fluids in greater or less quantities. There are supplied to us various absorbent materials, cotton, paper and spunk

being the common ones. These materials in the rough state consist of a mass of interlacing fibers, which we roll, cut or tear into forms suitable for our use.

In the movements of fluids it has been found that they flow most readily in straight channels. If we take a pledget of cotton to have terminating on its surface as many capillary tubes as may be formed by the spaces between the multitude of crossing fibers, we shall find that each tube has as many angles as there are fibers in the mass of cotton through from one side to the other. In cotton this can be remedied by using the sheet cotton, the fibers running one way. By rolling small squares of this into cylindrical forms, it will be seen to consist of a bundle of parallel fibers. In use, the end being applied to the moisture, the whole mass is instantly and evenly charged with fluid. When bibulous paper is rolled into pellets each layer of paper making up the pellet must become saturated before the next layer may take up the surplus. Now if the paper be rolled into ropes and cut with sharp scissors into convenient lengths, we have capillary spaces between each absorbent layer running from end to end, the conditions being much the same as in the bundle of cotton fibers mentioned before. Spunk, owing to its finely reticulated structure, will not absorb the thicker fluids readily. It absorbs water actively, particularly if the spunk be torn, thus opening the outer fibers.

The fibers of spunk are much smaller than paper or cotton, and instead of being arranged in straight lines or accidental curves are a mass of tightly twisted coils. When the spunk is cut in blocks, as is a common practice, these short curves are a source of danger, for any surface to which the blocks are applied will be dusted with short pieces of spunk fiber cut from the short curves that cross the line of cutting. Operators when testing for moisture while filling with gold, using blocks of cut spunk, have placed the block against the gold and wondered why the gold did not adhere when they resumed filling and there was no moisture; may have wondered, too, why certain fillings decayed at a point of the margin where, as a last detail to make sure of dryness, they had carried a block of cut spunk, leaving a powder of short fibers to decompose. The practice of rolling cotton or any absorbent material around in the fingers to form pellets never improves the material. If the fingers are dry, scales from the epidermis are drawn off on to the pellet, and if

moist the pellet becomes a failure as an absorbent. Both cotton and paper can be prepared with fibers running parallel and with capillary spaces running the way of the axis, rendering them a much more rapid and thorough absorbent, the ends which are applied to the surfaces being untouched by the fingers. It is well to bear in mind that an absorbing material should absorb, and at the same time leave no foreign matter behind.—*Pacific Jour.*, March, 1900.

* * *

LABORATORY HINTS. By A. E. H. Lister, Lincoln, Eng. It is not generally known how to obtain a good die from a lower model that has six or eight anterior teeth standing, and the jaw very much undercut below the necks of the teeth lingually. After the model has been prepared in the usual manner, oil or vaselin the parts adjoining the undercut, then flow plaster inside and build up the teeth as high as the plate is intended to go. While still plastic stick in two pins at a suitable distance apart and press them down until they touch the model. When fully set you can withdraw pins, and by gently tapping model the plaster will leave it clean. Thoroughly dry plaster, then replace and stick it with a little wax to model; take an impression in sand in the usual way. Remove plaster from model, see that it is perfectly dry, carefully replace in sand impression, and either stick the pins through the holes already made into the sand, or hold it lightly in place with a knitting needle or anything suitable until you pour in the metal. After a little experience with the above process you will be surprised to find that in nine cases out of ten you can procure a die on which to finish striking up a plate, which you could not have secured in any other conceivable way, to say nothing of the time saved.

When casting plaster impressions, instead of using oil or soap for the separating fluid, paint them over with a paint made of vermilion and oil, when you will be better able to detect the line of demarkation.

To clean the dirt and wax from teeth before trying them in, rub lightly with a soft rag moistened with methylated spirits.

If a vulcanite piece is to be packed upside down, you can economize time by inverting the impression for the duplicate in one-half of the flask, instead of in the usual way. Then when you wax the piece on to the model it is already flaked in one-half and there is no waiting for the plaster to set before you pour the counterpart.

To remove vulcanite from between the teeth, take a stiff, fine needle, mount it in a small handle or broach holder, sharpen it on two sides, and you have a useful little tool for the work.

When using water-of-ayr stone to erase scratches, it will greatly facilitate the removal if you occasionally dip it in a little pumice.

To remove scratches from a very deep palate, if you have not a hub brush, round one end of a cork and fix it on lathe mandrel the same as you would a brush, using the usual polishing paste.

Nail a wine cork conveniently on bench and stud it all over with pins (it is surprising to see how many one will hold), when you will always have some handy for sticking in impressions of teeth, etc.

Paste a piece of sandpaper within reach underneath bench, and you have a handy place to strike your matches.—*Items, Feb. 1900.*

* * *

ULCERATION OF THE GUMS IN MIASMIC FEVERS. By Dr. M. I. Polo, Cuba. During the war in our island for independence I had the opportunity of observing its pathological effects. When the war terminated almost all of those who had taken part in it were attacked by chills and fever, and in the majority of revolutionists, on account of lack of medicines and food, anemia made great progress. Because of this anemia came ulceration of the gums, fetor unsupportable, painful and difficult mastication, and slight hemorrhages. The infirmity presented itself in the form of small ulcerations on the gums, and if not cured in time these ulcerations attacked the throat, cheeks and soft palate.

In view of these symptoms I employed disinfectants and astringents, such as tannic acid, permanganate of potash, tincture of ratania, borate of soda, etc.; and the caustics, such as iodine, sulphate of copper, nitrate of silver, etc., but none of these gave satisfactory results, so that days and days passed without either cure or alleviation.

Among other experiments I prepared an official solution of chromic acid, crystallized—one part of acid, one part of distilled water, and afterwards diluted with two parts of water. Before undertaking the cauterization I prepared a concentrated solution of cocaine and with a brush lightly painted the affected parts, to produce slight anesthesia. Then wrapped a fine instrument with a film of cotton, and dipping this into the acid, carefully touched the affected parts of the gums.

I repeated this operation every two days, maintaining an aseptic condition of the mouth with the following wash: Acid boric, 1 gram; listerine, 30 gram; honey, 20 gram; decoction of quinin bark, 300 gram; and in four days the patients found themselves practically cured. Among my patients was one who had been attended a long time by a physician, but became wearied and solicited my services the first of the week. I treated him as above, and by Thursday he could eat food with ease, although he had partaken only of milk for 22 days. It is my opinion that any morbid growth or affection of the mouth, excepting malignant tumors, can be cured by these therapeutic agents.—*La Revista Dental Americana*, March, 1900.

ADENOIDS IN INFANCY.—Jacobi has confidence in daily irrigation, with normal saline solution of the nasopharyngeal cavities, which he asserts will render small adenoids harmless or may cause their complete disappearance.—*Med. Council*.

PARAFORM FOR WARTS.—Meuse (*Dermatol. Centrall.*) recommends paraform for the treatment of warts on account of its penetrative power. He has also used it in papular syphilides and in psoriasis palmaris. The drug is made up with collodion (10 per cent). Usually after two or three days the epidermis peels off.

ETHICS VS. EXPERTS.—“The pig-headedness of the medical fraternity of this country on the subject of advertising is one of the things no man can explain.”—*Newspaper Maker*. This does an injustice to the shrewdness of the medical profession and cannot be substantiated by facts. There is scarcely a newspaper in the country that does not carry from one to four columns of “professional cards” the year around without disturbance, for which from \$5 to \$15 a year is paid for each card as regularly as bills are presented. Supplemental to the regular “card” many physicians may have confidential understandings with their town papers that every personal mention of them in connection with prominent cases shall be charged for at regular local rates. The “legitimate school” has its code of ethics, to be sure, but it advertises too, in a most scientific and effective way. For illustration, how very common are innocent looking little news paragraphs something like this: “Our old friend and neighbor, Wm. Fancaster, met with the misfortune of a fall upon the icy pavement yesterday and severely wrenched his shoulder so that he was taken home in a carriage. Dr. Jones was hastily summoned, and under his prompt treatment the patient was soon resting comfortably. The doctor assures us that, although his patient’s symptoms were quite serious at first, they yielded to proper treatment, and he hopes to have Mr. Fancaster in his usual place at the bank in a few days.” Who would suspect that a two-dollar bill lurked beneath that item of news? The “pig-headed fraternity” can give our “advertising experts” the longest kind of odds and then forget the game, and still win out in a canter.—*Carlton Caveat*.

The Dental Digest.

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At 2231 Prairie Avenue, Chicago,

Where All Communications Should be Addressed.

Editorial.

HARLAN, HOLBROOK AND HUNT—THE DISGRACEFUL TRIUMVIRATE.

We print below a letter which has appeared in the April issues of the *Dental Review*, the *Indiana Dental Journal*, and with one or two of the most scandalous falsifications omitted, in the *International Dental Journal*:

MR. EDITOR,

Dear Sir:—There appeared in the December DIGEST an article entitled, "Are there Traitors in the Camp?" the writer of which, after referring by name to certain Newark dentists who had made an honorable settlement with the Crown Company, says as follows:

"Personally, we believe this so-called settlement is merely an arrangement between these men and the 'Crown Company,' the ulterior purpose of which is to make it appear that some members at least have no confidence in the Protective Association, as this would, of course, tend to weaken the influence of our organization, etc."

During the dental convention at Niagara Falls, when the newspapers published the decree of the court in favor of the "Tooth Crown Company," Dr. Crouse declared that he was utterly surprised and dumfounded, as he even did not know the suit was pending. All who were present at the convention remember his talk, and that he sent for his lawyer, who also expressed surprise and professed ignorance of the whole matter. At that moment the idea occurred to me, that if the men to whom we paid money to protect our interests could not keep track of what was going on in open court in a suit the outcome of which would be of more vital importance to the dental profession than any ever before instituted, then we need no longer look to Dr. Crouse or his lawyer for protection. That view of the matter would, naturally, destroy our confidence. But equally bad, or perhaps worse, is the only alternative view—that these two men, Dr. Crouse and his lawyer, were cognizant of the suit. In fact, I know that they advised witnesses while it was in progress, yet to us they professed ignorance. And now, as if to further test our credulity, they cry "Traitor," when a dentist complies with a ruling of the United States court.

I am a member of the D. P. A., and gave my money that I might be protected against fraud and imposture, but not for witnesses like those described in Judge Townsend's opinion:

"To further support the defense of anticipation, the defendant has introduced the same witnesses who, and the same exhibits which were before the court in the Bennett case. The inexplicable contrast between the statements of the same persons in the two cases is either an object lesson as to the fallibility of human memory and the uncertainty of human testimony, or is forcibly suggestive of perjury and fraud. * * *

"In the present suit not one of these witnesses is able positively to identify said exhibit, and the 'wife of a clergyman and her two daughters' now testify, after an examination of church records, etc., that they were mistaken in their former testimony, and that the cap was not put in Mrs. Martz's mouth until 1878, or until after the Low invention was completed, as found in the Richmond case and further proved herein. Even Dr. Beardslee now says that he cannot now testify that said work was done any earlier than the year 1878, and that, so far as he knows, the testimony of the Martzes as to the date when it was done, is correct. And further, as if to cap the climax of these contradictions, an apparently disinterested witness, Dr. Palmer, testified that he himself made the Beardslee-Martzes exhibit, and was told at the time that 'whatever of the kind I did was for use in defending the suit of the International Crown Company.' It is unnecessary to discuss further this branch of the case. * * *

"The defense of anticipation herein is overwhelmingly disproved by disinterested witnesses. The methods by which the Beardslee-Martzes evidence of anticipation was secured by Dr. Beardslee in the Richmond case appears to have been questionable and reckless, and it is to be hoped that such practices are unusual. The contradictions in his testimony are so direct and material as to disentitle him to any consideration * * *

"Day's testimony has not been discussed because his veracity is attacked, his testimony is contradicted, and the facts stated by him, if true, would be insufficient for various reasons."

A few years ago this class of work was unknown to me, but there are others who claimed it was old. So we banded together to raise a fund that might be used to investigate and find out the former state of the art, and Dr. Crouse was entrusted with the task and the funds. What he has done is here stated by Judge Townsend in the United States court. How he has spent the funds we do not know, but we think if he has proper evidence he must produce it soon or be branded the Arnold of the "camp."

If the DIGEST is the mouthpiece of the dental profession, why has not the decree of the court appeared in it? Is the profession not capable of reading it understandingly?

Furthermore, while we were sending communications to Dr. Crouse to Chicago in regard to the suit, and waited several days for his tardy reply, we learned—and now know it to be a fact—that at that very time he was wining and dining in New York City with the president of the Tooth Crown Company. In the early history of this Republic, when Arnold did such things, he had to flee the country.

In addition, we know of prominent dentists, members of the Dental Protective Association, who applied to it for protection when they were sued by

the Crown Company. They were sued, enjoined, and suffered great loss, but were not defended by the Dental Protective Association, nor reimbursed by it for all their outlay.

Now, these are some of the reasons why we paid the Crown Company.

C. W. F. HOLBROOK.

This letter is full of deliberate falsehoods, and is not only a gross libel upon the editor of this journal, but as all thinking men of the profession will recognize at a glance, is distinctly formulated in the interests of the International Tooth Crown Co. We are fully aware of the personal animus of the authors of this attack, but shall not for a moment permit them to turn us from the main issue. We have endeavored for a number of years to earn the ill-will of every enemy of the profession and we welcome this personal abuse as a tribute to our zeal in a good cause. As these renegades have some sort of standing in the profession, we deem it necessary to take up the more serious charges.

For nearly two years previous to the Niagara meeting last August we were aware that the Crown Co. were trying by some trick or scheme to obtain a reversal of the former decision which was in favor of the Protective Association. Two years ago we sent a letter to every member of the Association, Holbrook included, and followed it up with two more, relating our fears, and urging that the assessment authorized by the by-laws be paid. Holbrook did not respond, and to this day is a delinquent, not having paid his legal obligation to the Association. Even if the individual sued had been a member, instead of a person hired by the Crown Co. to stand as a defendant, we should have been compelled to put up our personal funds for the defense, as the Association had no money in the treasury. Furthermore, at various state meetings we urged upon members the necessity of keeping up the fight and showed the danger of the Crown Company's actions. Holbrook and men of his stamp who refused to pay their assessments are the culpable ones in this matter.

The statement that members of the Association suffered great loss through being sued by the Crown Co., inasmuch as they were not protected by the Association, is a barefaced lie. On two or three occasions in the past when members have been sued it has appeared, to their shame be it said, that they were in collusion with the Crown Co. In such cases we of course refused to defend in the name of the Association, and our suspicions were confirmed by the fact that no one of these men was further molested by the Crown Co.

Attacks on us personally will not suffice to lead us into a discussion of Judge Townsend's decision. We would say, however, that the witnesses who testified in the Association's former suit, and then contradicted themselves in the last case, where the Association was not represented in any way, gave straightforward testimony in the first case and *it was properly secured*. There were many queer circumstances in connection with the last suit, but we must decline to outline our plan of defense in the dental journals or to try our case therein.

Every member of the profession which he has betrayed, and every dentist of the state which he has disgraced, should point the finger of scorn at Holbrook, the Crown Co.'s tool. If dealing directly with him we should simply brand him as he deserves and drop the question, but as the hireling of the International Tooth Crown Co. we must show him up. He is an intimate friend of the Crown Co.'s attorney or agent at Newark, and it is currently reported that he secured that individual his "lucrative" job, and that he was the first dentist to settle and advised the others to do so. Judas received thirty pieces of silver for a certain act of betrayal, but we have not learned Holbrook's price.

Now as to the dental editors who have defiled their columns with this contemptible attack upon the Association. The screed was sent to the *Items of Interest* and the *Western Dental Journal*, but the editors of both these publications are fair-minded men. They wrote us for an explanation of the matter, and upon learning the true inwardness of the situation of course refused to lend their journals to the Crown Co. The other three editors had neither the courtesy nor the foresight to even ask us for the other side of the question. We are greatly surprised that Dr. Truman, editor of the *International*, should have published, in a journal which has always laid claim to being independent and devoted to the welfare of dentistry, matter subversive of the interests of the dental profession. Dr. Truman has also published an editorial, which he probably means to be fair, but he coincides with the Crown Co. and urges that we try our suits in the journals. Dr. Truman has always shown himself to be an honorable gentleman, and we do not think in the present case he realizes how he has sided with the Crown Co. in their efforts to make us outline the defense which will be adopted by the Association, but we certainly feel that he has laid himself liable to censure

for not even taking the trouble to find out the facts in the case before he published the Crown Co.'s letter.

We are not surprised that Geo. E. Hunt has lent himself to the dirty work, for he is avowedly not in favor of the Protective Association. At the last meeting of the Indiana State Dental Society he stated that he had not paid his assessment, did not intend to do so, and urged that the Association be disbanded. We understand that Hunt has given up the practice of dentistry and now seeks to make his living off the dentists. Even if professional honor does not influence him we should think financial considerations would have prompted him to refrain from making his journal an instrument to encompass the Crown Co.'s ends.

What can be said of A. W. Harlan, editor of the *Dental Review*, a professedly professional man? Although we may have had some differences of opinion, we did not suppose that his spleen would carry him to such lengths. In his personal troubles he has always had our sincere sympathy and the proffer of any aid we could give him, and this is the return. Ignoring the injustice to ourselves, the profession has honored and favored Harlan in many ways, yet he now turns traitor to his colleagues and joins hands with the worst enemy of the dental profession. What consideration should be shown men who will stoop to do the unclean work of such a predatory corporation as the Crown Co.?

Be all these things as they may, the time has come, in view of these attacks, when the profession must speak either for or against the management of the Protective Association. Is it not enough to give one's time and energy, to relinquish almost all recreation and pleasure, to be satisfied with a greatly diminished income through loss of time taken from one's personal practice, to fight the battles of the whole profession against corrupt gigantic trusts—all these things through twelve long years and without one cent of compensation—without being called upon or asked to answer malicious lies circulated by trust journals? The International Tooth Crown Co. are very aggressive in the east, are harrassing the dentists where suits have been brought, and started several new suits last week. To show the danger which the profession is in at the present time, we quote a statement made in a letter under date of April 24 to Mr. Ofield, the Protective Association's attorney, by the International Tooth Crown Company's attorney: "*I have assumed sole*

charge of the above named company's litigations. It is, I believe, proposed to conduct examinations of all defendants in all cases pending and to institute as rapidly as possible a considerable number of new suits, about one thousand, throughout the United States, and to conduct examinations in each of these as soon as at issue."

It is the evident intention of the Crown Company to break the back of the Association and to wear out and discourage its management. Yet in the face of this, editors who claim to have the good of the profession at heart are now lending their influence to its enemies. We have borne the vilest kind of personal abuse for many years, but the time has now come when the profession must say, and in no measured terms, whether or not they have confidence in the Protective Association and its management and wish us to continue in the work.

Notices.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

This organization will meet at Old Point Comfort, Va., on the afternoon of July 18, 1900. J. H. KENNERLY, Sec'y, St. Louis.

CALIFORNIA STATE DENTAL ASSOCIATION.

The annual meeting of this organization will be held at San Francisco, June 19-22, 1900. W. Z. KING, Sec'y, San Francisco.

COLORADO STATE DENTAL ASSOCIATION.

The annual meeting of this organization will be held at Boulder, Colo., June 12-14, 1900. L. S. GILBERT, Sec'y, Denver.

MISSISSIPPI STATE DENTAL ASSOCIATION.

At the annual meeting of this organization, April 3-5, 1900, the following officers were elected for the ensuing year: Pres., S. F. Carr; V.-P., H. T. Stewart; Sec., A. B. Kelly; Treas., J. E. Suber.

MICHIGAN DENTAL ASSOCIATION.

The annual meeting of this organization will be held at Kalamazoo, June 11-13, 1900, and the profession in this and neighboring states are cordially invited to be present. C. C. NOBLE, Sec'y, Detroit.

MASSACHUSETTS DENTAL SOCIETY.

The thirty-sixth annual meeting of this society will be held at the American House, Hanover street, Boston, June 6-7, 1900. The meetings, clinics

and exhibits will all be held under one roof. Good talent is promised for papers and clinics, and an especial feature will be a clinic on porcelain work by a prominent Philadelphia dentist. The exhibits will also be extensive. The hotel will give special rates and good accommodations. It is hoped that a large number will be in attendance, and a cordial invitation is extended to all reputable dentists to be present. E. O. KINSMAN, Sec'y, Cambridge.

CENTRAL DENTAL ASSOCIATION.

At the annual meeting of the Central Dental Association of Northern New Jersey, April, 1900, the following officers were elected for the ensuing year: Pres., H. S. Sutphen; V.-P., F. G. Gregory; Sec'y, N. M. Chitterling; Treas., Chas. A. Meeker; Ex. Com., J. S. Vinson, F. L. Hindle, C. W. Hoblitzell, J. W. Fisher, P. G. Voegtlen. N. M. CHITTERLING, Sec'y, Bloomfield.

ODONTOGRAPHIC DENTAL SOCIETY OF CHICAGO.

At the annual meeting of this society, March, 1900, the following officers were elected for the ensuing year: Pres., T. L. Gilmer; V.-P., L. S. Tenney; Sec., F. H. Zinn; Treas., G. N. West. Board of Directors—J. E. Nyman, 1901; A. B. Allen, 1902; G. B. Perry, 1903. Board of Censors—A. G. Johnson, chairman; F. E. Roach, J. B. Dicus. F. H. ZINN, Sec'y.

CHICAGO DENTAL SOCIETY.

The following officers were elected at the annual meeting of this society April 3, 1900: Pres., G. W. Cook; First V.-P., G. B. Perry; Second V.-P., H. J. Goslee; Sec., E. MaWhinney; Cor. Sec., C. S. Bigelow; Treas., A. D. Clark; Librarian, H. W. Sale; member Board of Directors, J. E. Hinkins; Board of Censors, W. V-B. Ames, chairman; C. N. Johnson, A. W. Harlan. C. S. BIGELOW, Sec'y.

VERMONT STATE DENTAL SOCIETY.

At the twenty-fourth annual meeting of this organization March 21-23, 1900, the following officers were elected for the ensuing year: Pres., H. Turrill; First V.-P., C. W. Steele; Second V.-P., J. A. Pearsons; Rec. Sec'y, T. Mound; Cor. Sec'y, Grace L. Bosworth; Treas., W. H. Munsell; State Prosecutor, G. W. Hoffman; Ex. Com., J. H. Jackson, H. Burbridge, R. H. Newton. The next meeting will be held at Montpelier March 20-27, 1901. THOS. MOUND, Sec'y, Rutland.

DENTAL COMMISSIONERS OF CONNECTICUT.

This board will meet at the Capitol in Hartford May 14 and 15, 1900, for the examination of candidates for license. Practical examination in operative and prosthetic dentistry at 10 a. m. May 14. Written theoretic examination evening of May 14 and day of May 15. Candidates holding temporary permits and coming under the rules in force prior to Jan. 1, 1900, must appear May 14 between 10 a. m. and 2 p. m. All persons desiring to practice dentistry in the state must apply to the recorder for revised rules and for the proper blanks. Blanks must be carefully filled in and sworn to, and

with the fee, \$25, filed with the recorder at least one week before the date of examination. G. L. PARMELE, Commissioner and Recorder, Hartford.

NATIONAL DENTAL ASSOCIATION.

The date of meeting of this organization has been changed by vote from June 26 to July 10, 1900, and the Association will convene at Old Point Comfort, Va. This is a very pleasant place in which to meet, and everything bids fair for a successful and profitable gathering. Application has been made for reduced fare on all the railroads, and the rates will be published in our next issue. We would especially urge upon the various state and local societies that they elect their full quota of delegates, and choose men who will attend the National Meeting. All those having papers which they wish to bring before the Association should communicate with the proper sections.

J. N. CROUSE, Chairman Executive Committee.

LATEST DENTAL PATENTS.

- 645,345. Dental broach, Luther A. Young, St. Louis.
- 645,413. Dental separator, Edward Wishart, Waterford, assignor to J. W. Ivory, Philadelphia.
- 645,608. Dental plugger, Charles Schake, Jr., Davenport, Iowa.
- 646,603. Artificial tooth, Herman R. Nehrbass, Hartford, Wis.
- 646,629. Device for regulating teeth, Wm P. Sugatt, Boston.
- 646,764. Artificial tooth, Thomas Steele, Red Bank, N. J.
- 647,010. Dental plugger, Frank L. Marshall, Boston.
- 647,400. Artificial denture, Arthur T. Glew, Germantown, O.
- 32,478. Design, artificial incisor tooth, Arthur T. Glew, Germantown, O.

ILLINOIS STATE DENTAL SOCIETY PROGRAM.

Annual meeting at Springfield, May 8-11, 1900. 1. President's Address, R. N. Laurance, Lincoln. 2. Report of Committee on "Dental Science and Literature," A. W. Harlan, Chicago. 3. Report of Committee on "Dental Art and Invention," H. J. Goslee, Chicago. 4. "Gold Crown with Solid Carved Cusps," J. E. Nyman, Chicago. 5. "A Few Thoughts on Prosthetic Dentistry," W. W. Moorehead, Aledo. 6. "Simple Method of Treatment of Fractures of Lower Jaw," W. A. Johnston, Peoria. 7. "Calcification a Controlling Factor in the Treatment of the Teeth," Grafton Munroe, Springfield. 8. "Habits Incident to the Dental Profession," G. W. Entsminger, Carbondale. 9. "Electricity Through the Ages and Its Value with Regard to Dentistry," G. E. Lob, M. E., Chicago. 10. "Pyorrhea Alveolaris, So-called," A. H. Peck, Chicago. 11. Operative Dentistry: A. "To Emphasize Some Things in Operative Procedures," D. M. Cattell, Chicago. B. "Improvements in Operative Dentistry During Recent Years, and the Betterments to be Expected in the Future," Edmund Noyes, Chicago. Dr. Black will open the discussion on both. The discussion on this subject not to be confined strictly to the paper read. 12. "Antiseptics," Elgin MaWhinney, Chicago. 13. Report of Supervisor of Clinics, J. E. Hinkins, Chicago.

CLINICS. 1. W. G. Clark, Chicago. Exhibit—Electro-plating apparatus.

2. P. A. Pyper, Pontiac. Contour filling, platinum and gold, central incisor.
3. J. O. Brown, Chicago. Contour filling, Watts' crystal gold. 4. J. N. McDowell, Chicago. Orthodontia, models and regulating appliances.
5. F. E. Roach, Chicago. Use of rubber teeth in crown and bridge work.
6. W. W. Tobey, Danville. Contour filling, Williams' untrimmed gold. 7. A. J. Elmer, Rochelle. Pyorrhea alveolaris. 8. Truman W. Brophy, Chicago. Surgical clinic. 9. W. F. Green, South Evanston. Table clinic. Root-canal filling, eucalypto-percha. 10. Geo. W. Cook, Chicago. Surgical treatment of pyorrhea. 11. Lee K. Stewart, Chicago. Continuous gum case. 12. J. E. Nyman, Chicago. Carving solid gold cusp. 13. W. V-B. Ames, Chicago. Some cements under the microscope. 14. J. R. Rayburn, Fairbury. Gold filling. Compound cavity in bicuspid, Power's engine mallet. 15. M. L. Hanaford, Rockford. Gold filling. Distal surface of cuspid. 16. J. W. Gluesing, Moline. To be announced. 17. G. A. Miller, Chicago. Seamless gold crown carved cusps. 18. W. F. Fowler, Chicago. Porcelain inlay. 19. Robt. Good, Chicago. Pyorrhea alveolaris. 20. A. F. James, Oak Park. Immediate regulation. 21. C. N. Thompson, Chicago. Porcelain inlay. 22. F. F. Fletcher, St. Louis. Gold Filling without Dam. 23. L. S. Tenney, Chicago. Gold restoration, anterior tooth. 24. F. V. Yorker, Chicago. Gold filling. 25. L. W. Nevius, Chicago. The use of nitrous oxid and extracting teeth.

J. E. HINKINS, *Supervisor of Clinics.*

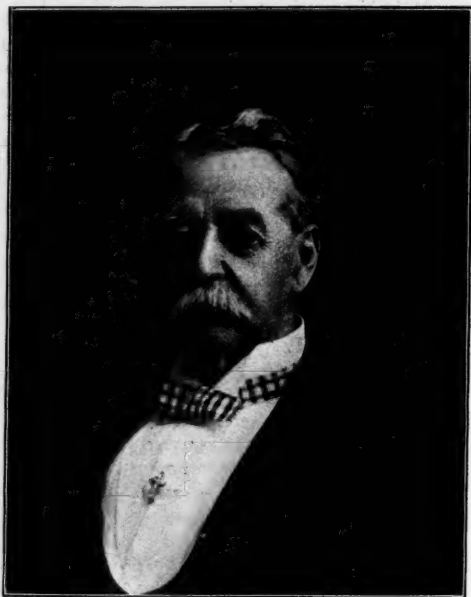
BANQUET TO DR. McKELLOPS.

On Saturday evening, March 24, 1900, the St. Louis Dental Society gave a complimentary banquet to Dr. H. J. McKellops. It was not his birthday nor any other anniversary which offered the members of that society an excuse for gathering. They simply felt that it was due one who for fifty-six years has been a practicing dentist, and who has done so much to uphold the dignity of his calling, and has labored so strenuously for its advancement, that his followers should show the esteem in which they held him and the regard they had for his lifelong services.

Dr. W. T. Lawrenz was toastmaster, and the following responded to toasts: "Our Honored Guest," John G. Harper; "The St. Louis Dental Society," A. H. Fuller; "The Sign of the Cross," (referring to the diamond-studded gold cross which Dr. McKellops always wears on his shirt-bosom), M. C. Marshall; "How to Regulate Him," E. H. Angle; "The Typical Professional Gentleman of the Old School," Wm. Conrad; "Good Fellowship," M. R. Windhorst.

The committee comprised Wm. Conrad, W. M. Bartlett, F. F. Fletcher, De Courcey Lindsley, B. L. Thorpe, H. M. Hill. The menu cards, which were very artistically devised, contained a splendid likeness of the guest of the evening, which we here reproduce. There was nothing ostentatious about the gathering, but the room was tastefully decorated and banked with flowers. Each one present strived to outdo the other in rendering homage to Dr. McKellops, and good fellowship was the keynote of the function. Those present included: H. J. McKellops, H. F. Lawrenz, A. H. Fuller, A. J. Prosser, F. F. Fletcher, O. H. Manhard, B. L. Thorpe, M. R. Windhorst, E. H.

Angle, J. B. Newby, De Courcroy Lindsley, W. M. Bartlett, J. G. Harper, J. H. Kennerly, M. C. Marshall, H. M. Baird, H. M. Hill, William Conrad, T. L. Pepperling, Geo. A. McMillen, C. J. Tibbets, John S. Marshall, H. A. Pullen, W. G. Cox, P. H. Morrison, C. D. Lukens, C. F. Schumacher, James P. Tarper, F. H. Bond, S. C. Nifong, W. A. Roddy, O. J. Fruth, D. O. M. le Cron, A. D. Fuller, Burt Barry, A. Flickinger, P. H. Eisloeffel, J. G. Pfaff, C. P. Pfaff, Leo McKellops, H. Prinz.



H. J. McKellops

Dr. H. J. McKellops was born at Salina—now Syracuse—N. Y., in 1829 and came to St. Louis when only eleven. Soon after he was a page in the Missouri House and there earned the money which later took him to the Missouri University, where he stayed for awhile and then returned to St. Louis in 1844. Soon after he went into the City Registrar's office, and in 1846-7 studied in the old St. Louis Medical College, then took up dentistry, and soon after opened an office on Fourth street. He has been president of numerous societies, was active for years as a militiaman, was in the Mexican and Civil Wars, and was in Frost's expedition against the bushwhackers in the early days. He has the courtly manners of the old-time gentleman and is rightly termed the "Chesterfield of the dental profession."

FINAL REPORT OF THE LAW COMMITTEE OF THE NATIONAL ASSOCIATION OF DENTAL FACULTIES.

To the Editor:

It is well known to the members of the dental profession, especially those interested in dental education, that in April, 1899, the Wisconsin State Board of Dental Examiners refused to register diplomas from the Chicago dental colleges and other schools, as the law provides. The provision of the law is that the board shall at all times issue a license to any regular graduate of any reputable, legally incorporated dental college, without examination, upon the payment of the registration fee. After making inquiry of the secretary of the board as to the reason why the diploma of his client was not registered, Attorney Quarles, who had been retained in the case, received the following reply:

"MILWAUKEE, April 15, 1899.

"Hon. J. V. Quarles, Milwaukee, Wis.

"DEAR SIR:—I am authorized to say from instructions received from a member of the Committee on Colleges of the National Association of Dental Examiners, that if the college you represent accepts all the rules as laid down by the National Association of Dental Examiners, in regular form through that body, that this board will, upon the receipt of such knowledge, issue licenses to regular graduates of said college.

(Signed)

"H. W. CARSON, Secretary."

After receiving the above letter, Dr. P. T. Diamond, a graduate of the Chicago College of Dental Surgery, brought mandamus proceedings to compel the board to accept his diploma. The board moved to quash the proceedings, which motion was denied by the court, in a vigorous decision handed down by Judge Sutherland of the Superior Court of Milwaukee County, Wisconsin. Summing up the case in regard to the standing of the college, the judge makes use of the following language:

"The reputation in this case shows that among intelligent men, whether members of the dental profession or not, the Chicago College of Dental Surgery must be regarded as a reputable institution. * * * Therefore, without difficulty the court reaches the conclusion that the motion to quash the mandamus proceedings must be denied."

The action of the board was based on the ground that those schools refused to subscribe to a rule passed by the National Association of Dental Examiners, regarding the preliminary educational qualifications of students, the colleges giving as a reason their unwillingness to accept the interference of the boards in a matter which was outside of their proper function.

The National Association of Dental Examiners, of which the Wisconsin Board was a member, at their meeting at Niagara Falls, in August, 1899, rescinded the rule which was the cause of the controversy, and passed a resolution adopting, in substance, the rule governing preliminary educational qualifications of students, which was adopted in 1898 by the National Association of Dental Faculties, and it was hoped that henceforth the two national bodies would work in concert and harmony. In adopting this resolution the National Association of Dental Examiners recommended to the va-

rious state boards that all the schools belonging to the National Association of Dental Faculties be placed on the recognized list, and that the graduates of those schools be licensed, and that all litigation cease. In all states where difficulties had arisen regarding the registration of diplomas of graduates of schools belonging to the National Association of Dental Faculties the trouble was at once terminated and licenses issued, except in the State of Wisconsin. The representative from the Wisconsin Board pledged himself at Niagara Falls to return home and do all in his power to terminate the litigation. The week following the National Association meeting the Wisconsin Board, with their attorney met by appointment the representatives of the Chicago College of Dental Surgery and the plaintiff in the case against the board with his attorney, and after a conference the representatives of the board informed the representatives of the college that the members of the board had voted unanimously to continue the litigation.

On August 18, 1899, the following letter was written by Senator J. V. Quarles, attorney for the complainant, to Dr. T. W. Brophy, dean of the Chicago College of Dental Surgery:

"Dr. T. W. Brophy, Chicago.

"DEAR DOCTOR:—As you are aware, a meeting of the state board of dental examiners took place yesterday in this city, for the ostensible purpose of carrying out the recommendation of the National Board so explicitly made at its meeting at Niagara Falls. Nothing could be more plain and explicit than the recommendations of such National Association, which ought to be looked upon as a command by members thereof.

"I have to report, however, that our state board has assumed to be wiser than the national organization, and has positively declined to follow or respect the mandate of the central body. The state board refuses to recognize the diplomas of your college and all others similarly situated, and leaves no course open but to continue the litigation. We shall therefore, unless ordered to the contrary, embrace the first opportunity to crowd the case to a final hearing, and allow the National Board to deal with its recalcitrant members.

"Very respectfully yours,

(Signed)

"QUARLES, SPENCE & QUARLES."

Preparations were then made for a vigorous prosecution of the case. The Law Committee of the National Association of Dental Faculties, which was created at the Niagara Falls meeting in August, 1899, for the purpose of taking charge of this litigation, as well as any other litigation involving the Association or any college holding membership therein, held a meeting in Chicago, October 14, 1899, and after Drs. Barrett and Morgan of the committee held a conference with the members of the Wisconsin State Board, the latter agreed to license graduates of the Chicago colleges and all schools belonging to the National Association of Dental Faculties. November 6 the agreement was consummated. November 7 the following letter was received by the dean of the Chicago College of Dental Surgery:

"Dr. T. W. Brophy, Chicago, Ill.

"DEAR SIR:—After great tribulation, regarding matters of detail, I am glad to report to you that the board has finally decided to conform with the

provisions of the Dental Law of Wisconsin, abide by the ruling of the National Association of Dental Examiners, and license Chicago graduates and all other graduates from schools holding membership in the National Association of Dental Faculties; thus admitting that, in their action in refusing to license these graduates from April 11 to November 6, 1899, they were in the wrong. Everything consequently in the Diamond mandamus case has been brought to a satisfactory conclusion.

"The injustice the Wisconsin State Board of Dental Examiners has done your graduates, yourself and the many schools involved, cannot be easily forgotten, but our success in securing all we contended for is an assurance of the justice of our cause.

"Dr. Diamond's license has been issued, on our assurance that he would discontinue the case. The stipulation to withdraw the suit has been signed by both parties; the whole matter is now closed up, and the litigation is a thing of the past.

Yours truly,

"QUARLES, SPENCE & QUARLES."

Signed, { A. O. HUNT,
W. C. BARRETT,
HENRY W. MORGAN,

Law Committee of the National Association of Dental Faculties.
November 22, 1899.

TO THE DENTISTS OF WISCONSIN.

MADISON, Wis., March 24, 1900.

A most remarkable document has appeared lately in several dental journals, and has also been mailed, in pamphlet form, to the dentists of Wisconsin under cover of the business envelope of Dr. Truman W. Brophy, dean of the Chicago College of Dental Surgery.

This document purports to be an official report of the Committee on Law of the National Association of Dental Faculties (and up to the present time has not been disowned by them). It contains a version of the manner of settlement of the mandamus suit brought by the Chicago College of Dental Surgery, in the name of one P. T. Diamond, against the Wisconsin State Board of Dental Examiners, which is so untruthful, and intentionally misleading, as to facts and conclusions, that I deem the time to have come when you are entitled at the hands of your state dental board to the *real* facts and conclusions as they exist to-day.

Last August, at Niagara Falls, the two national bodies, viz.: the National Association of Dental Examiners and the National Association of Dental Faculties, after a week of conference, jointly established a minimum educational prerequisite for matriculation in dental colleges, and recommended "that all litigation (on that subject) be withdrawn."

The Wisconsin board could not withdraw a suit brought against itself, and so awaited the motion of the Chicago College toward obeying the joint agreement and withdrawing its suit.

The first, last and only proposition from the plaintiff or colleges concerned ever presented to this board, or any member of it, as a basis of withdrawing

their suit against this board, except such as would imply an unconditional surrender of the entire contention on our part (an action never considered for a moment by us), was the following document (Exhibit A) presented to me personally at my office in Madison on Oct. 16, 1899, by two members of the Committee on Law of the National Association of Dental Faculties, viz.: Henry W. Morgan, dean of Vanderbilt University of Nashville, Tenn., and W. C. Barrett, dean of University of Buffalo, who informed me they came empowered by the Chicago College, et al., to settle the suit.

EXHIBIT A.

CHICAGO, Oct. 14, 1899.

On the part of the Chicago College of Dental Surgery and Northwestern University Dental Department, we hereby accept the terms of agreement made at Niagara, between the committees representing the National Association of Dental Faculties and the National Association of Dental Examiners in August last, to carry out all its provisions in good faith, and at once to discontinue all litigation for which we are in any manner responsible, immediately upon its acceptance, with the like stipulations on the part of the Dental Examining Board of the State of Wisconsin.

CHICAGO COLLEGE OF DENTAL SURGERY,

TRUMAN W. BROPHY, *Dean*

NORTHWESTERN UNIVERSITY, DENTAL DEPARTMENT,

BY THEODORE MENGES, *Secretary*.

(A true copy, HENRY W. MORGAN, Oct. 17, '99.)

I at once executed and gave into their hands the following agreement (Exhibit B) which they declared to me to be entirely satisfactory, and to which Dr. Morgan, a few days after, informed me by letter, he promptly received either the signature or approval of *all* the members of the Wisconsin board, making the agreement unanimous.

EXHIBIT B.

MADISON, Wis., Oct. 16, 1899.

TO HENRY W. MORGAN and W. C. BARRETT, of the Committee on Law, National Association of Dental Faculties.

Gentlemen—After the mandamus suit against the Wisconsin Board of Dental Examiners shall have been withdrawn, I will cast my vote and use my influence for the immediate acceptance by said board of the standards and rules jointly accepted and passed by the National Association of Dental Examiners and the National Association of Dental Faculties at Niagara, in August, 1899.

CHAS. C. CHITTENDEN.

I hereby subscribe to the within statement as made by Dr. C. C. Chittenden.

W. H. CARSON.

I accept and approve the within statement of Dr. C. C. Chittenden.

C. C. WENTWORTH.

(A true copy, HENRY W. MORGAN, Oct. 17, 1899.)

The following correspondence explains itself:

MADISON, Wis., Oct. 29, 1899.

MY DEAR GEN. DOE:

The inclosed letter from Dr. Henry W. Morgan of the Faculties Law

Committee was just received. I also inclose correct copy of agreement signed by the Wisconsin Board on which the withdrawal of the case is predicated.

Will you kindly look to it that the integrity of the Wisconsin law as understood and administered by our board is preserved intact in any case, as regards the method and manner of such withdrawal. Let the plaintiff do the withdrawing.

Feeling sure you understand just what will be the best manner of conserving our interests I leave this matter in your hands, and remain,

Yours very truly, CHAS. C. CHITTENDEN,
President Wisconsin Board of Dental Examiners.
MILWAUKEE, Nov. 6, 1899.

C. C. CHITTENDEN, D.D.S., Madison, Wis.

My Dear Doctor:—I enclose you copy of stipulation entered into this day by Senator Quarles and myself in the Diamond case. (Exhibit C.) The discontinuance of the suit was based upon the letter signed by yourself and other members of the State Board, addressed to Henry W. Morgan and W. C. Barrett, of the law committee of the National Association of Dental Faculties, under date of October 16, 1899, and was brought about in pursuance to your instructions in your letter to me dated October 29, 1899, in which you directed that the plaintiff should be required to withdraw his case before anything was done on the part of the board, and charged me to see that the integrity of the Wisconsin law, as understood by the board should be preserved intact. This I attempted to, and think I did accomplish.

Very respectfully yours, JOSEPH B. DOE.

EXHIBIT C.

Stipulation for discontinuance. Made Nov. 6, 1899.

Superior court,—Milwaukee county.

State of Wisconsin, ex rel. Peter T. Diamond, *plaintiff*.

vs.

R. G. Richter, C. C. Chittenden, C. C. Wentworth, W. G. Oliver and W. H. Carson, as state Board of Dental Examiners of the State of Wisconsin, *defendants*.

It is hereby stipulated and agreed by and between the parties to the above entitled action that said action be and the same is hereby discontinued without costs to either party.

QUARLES, SPENCE & QUARLES, *Plaintiffs' Attorneys*.

JOSEPH B. DOE, *Defendants' Attorney*.

The next day being November 7, 1899, the Wisconsin Board carried out its agreement with the Committee on Law of the National Association of Dental Faculties by unanimously passing the following preamble and resolutions (Exhibit D) and also on that date issued a license to P. T. Diamond on his presenting the proper affidavit, executed in Chicago by him on Nov. 7, on a blank form procured from Secretary Carson by Sen. Quarles, after suit was withdrawn.

EXHIBIT D.

WHEREAS, The mandamus suit brought against this board on behalf of the

Chicago College of Dental Surgery, the Northwestern University Dental department of Chicago and other schools in the name of P. T. Diamond has been withdrawn by them from the courts without costs, therefore

Resolved, That in the judgment of this board, so far as preliminary educational requirements are concerned, only such dental colleges are reputable as require of students seeking admission, as a minimum preliminary educational requirement, a certificate of entrance into the second year of a high school, or its equivalent, the preliminary examination to be placed in the hands of the State Superintendent of Public Instruction. And

Resolved, That hereafter this board issue a license to practice dentistry in the State of Wisconsin, without examination by this board, to any person tendering the proper fee and duly presenting to the board, or its secretary, a certificate of graduation or diploma from a regularly incorporated dental college requiring the minimum preliminary education above mentioned, provided the college issuing such certificate of graduation or diploma be, in the judgment of the board, reputable in all other respects.

From the foregoing you will readily be enabled to understand that the efforts of this board to advance educational standards have not been made in vain.

In the past, colleges in the United States that so desired could matriculate whomsoever they chose on whatever credentials they chose, and were accountable to nobody. To-day there exists a national, iron-clad agreement between the colleges and examiners to the general effect that *no school shall be considered as "reputable" which does not require as an educational prerequisite for matriculation, "a certificate of entrance into the second year of a High School, or its equivalent, the preliminary examination to be placed in the hands of the State Superintendent of Public Instruction."*

This was the compromise on which our late contention was settled. It has taken a good deal of time and some courage to accomplish all this, but we feel that the result is worth it all; and from present indications the time is close at hand when educational standards, curriculum and length of course will be so advanced as to place our beloved profession in the very van of the procession.

This statement is prepared and sent you by authority of the entire Wisconsin State Board of Dental Examiners. CHAS. C. CHITTENDEN, *President*.

The following letter, just received from our attorney, best sets forth the present state of affairs as regards the board's interpretation of the Wisconsin law in respect to their judicial powers and responsibilities in educational standards:

SPARTA, Wis., March 21, 1900.

DR. C. C. CHITTENDEN, Madison, Wis.

My Dear Doctor:—We are at last in a way of securing a final determination by the Supreme Court of the legal questions the board wishes to have settled, in the quickest, easiest and cheapest way possible.

Last night we argued the demurrer in the Rice case and Judge Wyman, with much hesitation and uncertainty, sustained the demurrer.

I secured a stay of proceedings in order that we might appeal to the Supreme Court.

We can get a decision upon, and interpretation of our statute at the next term at Madison, which begins in August.

The only question to be decided is "Did the board, in requiring an educational preliminary as a necessary element of *reputability*, exceed its powers?"

This is the question we all want settled. If the Supreme Court is against us, the law must be amended. If with us, the controversy is at an end.

Very respectfully,

JOSEPH B. DOE.

News Summary.

A. DEVILBISS, a dentist of Decatur, Ind., died April 8, 1900.

FLORENCE COVERT-MILLER, a dentist of Chicago, died April 4, 1900.

J. H. NELSON, a dentist at North East, Md., died suddenly March 19, 1900.

UTAH DENTAL EXAMINING BOARD is after the illegal practitioners in that state.

WM. A. MOORE, a dentist at Benicia, California, died of heart failure March 21, 1900.

C. S. ROEVER, 24 years of age, a dentist in Brooklyn, died April 4, 1900, from appendicitis.

G. S. PEARCEY, a prominent dentist of Jackson, Tenn., died suddenly from pneumonia March 23, 1900.

A. S. DUVALL, who thirty years ago practiced in Fayetteville, Tenn., died March 26, 1900, at Lawrenceburg.

BROKEN TOOTH.—"If a man has a broken tooth it keeps him busy keeping his tongue out of it."—*Wash. Dem.*

POWER OF X-RAYS.—"An X-ray specialist is going to marry one of his patients. The query is, what he could have seen in her."—*Somerville Jour.*

LOSING FALSE TEETH.—"The question is: Does a man with false teeth lose control of them in a moment of excitement? Yes, if they are not paid for."—*Ex.*

APPROPRIATE NAME.—A dentist in Chicago is blessed with the name of "Leggo." When he is extracting teeth it is easy for his patients to properly address him.

H. T. MANLOVE, 68 years of age, died at Logansport, Ind., April 2, 1900. He was one of the oldest practicing dentists in the state, having been in Logansport for 47 years.

IOWA AND INDIANA BOARDS AT WORK.—These two organizations brought charges recently against two dentists in their respective states who were practicing without licenses.

OPPORTUNITIES IN NICARAGUA.—The consul writes to the state department that American physicians, surgeons and dentists may find remunerative employment in that country.

JACKSON (MICH.) DENTAL SOCIETY on April 3, 1900, elected the following officers for the ensuing year: Pres., W. E. Merritt; V.-P., F. W. Winchester; Sec. and Treas., F. E. Robinson.

THE GENTLE SEX.—“Dr. Mary — is more than getting her share of the dental business, because she is more gentle than the man dentist. See her ad. on page 8.”—*Aurora (Ill.) News*.

CHARLES T. NOYES, a Chicago dentist and Christian scientist, died April 1, 1900, from organic disease of the heart. Two Christian science healers attended him but failed to give relief.

UNSOPHISTICATED.—“You always patronize young dentists, I notice, Mr. Higgins.”

“Yes; they are timid about making big bills.”—*N. Y. Lancet*.

GRAND RAPIDS (MICH.) DENTAL SOCIETY at its annual meeting, April 3, 1900, elected the following officers for the ensuing year: Pres., L. F. Owen; V.-P., W. A. Dorland; Sec., W. A. Rawson; Treas., H. D. DeWar.

SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS will meet at Vermillion May 16, 1900, and at Lead, June 6.

G. W. COLLINS, Sec’y, Vermillion.

BOUND AND GAGGED HIMSELF.—A dentist’s assistant at Laporte, Ind., bound and gagged himself in his employer’s office, and when released claimed that a burglar had robbed the safe of gold and notes to the value of \$800, which were missing.

TAKE HEED.—Watts: Doctor, do you believe that the use of tobacco tends to shorten a man’s days?

Dr. Bowless: I know it does not; I tried to quit once, and the days were about eighty hours long.

FALSE TEETH CAUSE DEATH.—A farmer near Steubenville, O., accidentally swallowed a plate holding two false teeth, April 3, 1900. It lodged in the larynx. An operation was performed and the plate removed, but an abscess developed from which he died.

ELECTRIC LAMP DANGER.—In lighting electric lamps it is a wise precaution to turn the head away, as a man in England recently was partially blinded by the electric light bulb exploding when the current was turned on, as the glass embedded itself in his eye.

ILLINOIS STATE DENTAL SOCIETY MEETING.—If you expect to attend this convention at Springfield May 8-11, and we trust every dentist in Illinois and adjacent states has that intention, the Chicago & Alton R. R. offers in every way the best accommodation and service.

THIRD DISTRICT DENTAL SOCIETY OF NEW YORK STATE elected the following officers April 17, 1900: Pres., C. H. Bird; V.-P., G. A. Sullivan; Sec’y. M. J. Barrett; Treas., J. W. Canaday; Correspondent, F. LeG. Ames; Ex-Com., J. W. Hine, F. F. Hawkins, C. E. Allen.

VALLEY DENTAL SOCIETY held its annual meeting and banquet at Springfield, Mass., April 19, 1900, and elected the following officers: Sec’y, A. J.

Flanagan; Treas., C. S. Hurlbut, Jr.; Ex. Com., P. W. Soule, D. H. Allis, W. H. Spencer; Councillor to state society, G. A. Maxfield.

EASTERN COLLEGE OF PAINLESS DENTISTRY.—A concern with the above name at Pittsburg has made application for a charter, but several prominent dentists have filed exceptions, on the ground that the incorporation would evade the acts of assembly and should not be allowed.

EARLY TO BED and early to rise does very well with preachers and guys, but makes a man miss all the fun till he dies and joins the old stiff that are up in the skies. Go to bed when you please, and lie at your ease, and you'll die just the same from a Latin disease.—*Gillard's Med. Jour.*

CROWDED.—The Back Bay district of Boston, an area a mile long by one-third of a mile wide, contains 401 physicians and surgeons and 109 dentists. Of the doctors, 271 have some specialty. The population of the district is 20,000. This gives a doctor for every fifty people.—*Med. Age.*

SANDUSKY, O., DENTISTS ORGANIZE.—It is understood that their object is to protect themselves against those people who change dentists frequently and forget to pay any. The following officers were elected: Pres., E. J. Wayne; V.-P., A. F. Miller; Sec., J. K. Douglas; Treas., C. D. Peck.

DANGER IN EXTRACTION.—While extracting a tooth a dentist in Ohio had a fragment fly off and imbed itself in the ball of his left eye. A dentist in Kansas had a molar slip through the forceps and strike him in the eye, impairing the sight for some time. Moral. Do not do so much extracting.

CONSUMPTION CURED BY COUGHING.—A woman in Dodge City, Kan., who had been given up to die, as physicians diagnosed quick consumption, coughed up a broken piece of tooth which had gone down her throat some time before during extraction. In a few days her lungs seemed to be normal again.

SOUTHERN MINNESOTA DENTAL SOCIETY at its annual meeting, April 11, 1900, elected the following officers: Pres., Frank James; V.-P., C. A. Palmer; Sec., A. C. Rosenquist; Treas., M. B. Wood. C. N. Johnson of Chicago, who delivered a series of lectures during the meeting, was made an honorary member.

TO STOP BLEEDING FROM TOOTH CAVITY.—A part of a tablet of mur. tr. of iron crowded into a cavity where a tooth has been extracted and troublesome bleeding follows, will stop it immediately. The tablet swells to fit the cavity and the acid iron coagulates. No cotton is needed. W. H. Judson, M. D., in *Medical World*.

STATE HOSPITAL NOT LIABLE FOR NEGLIGENCE.—A public corporation, such as a state hospital for the insane, which exercises exclusively governmental functions, the supreme court of appeals of Virginia holds, in the case of Maia, administrator vs. Directors of Eastern State Hospital, is not liable for the negligence of its agents.—*Jour. A. M. A.*

WHY HE GOES ELSEWHERE.—You have a dentist in the same office with you, yet I notice you go to some one else to have your teeth fixed." "True," replied the physician. "I cut a felon out of his finger once after telling him

to look pleasant and not mind the trifling pain, and I would rather not give him the chance to get back at me."—*Chicago Post*.

FIFTH DISTRICT DENTAL SOCIETY OF NEW YORK STATE—At the semi-annual meeting of this organization, April 11, 1900, the following officers were elected: Pres., W. F. Tremaine; V.-P., C. H. Barnes; Treas., J. C. Curtis; Cor. Sec., J. H. Dower; Librarian, F. R. Adams; Board of Censors, F. D. Nellis, S. B. Palmer, A. Retter; delegates to State Society, S. Slocum, J. C. Benz.

MAGNIFICENT TEETH.—A man presented for examination and the dentist examined his teeth with admiration. "What do you think of them?" asked the patient. "Magnificent! magnificent!" was all the dentist could say. "Then you do not find anything to do to them?" "To do to them? why there are four to be pulled, six to be filled and three to be crowned," said the dentist.

DR. EVANS' MILLIONS MAY BE TIED UP FOR MANY YEARS—It seems that article 16 of the will provides for the formation of a corporation to carry out the testator's desires, and as this forms a trust, the will, which must be settled in the French courts, comes into opposition with the old Napoleonic law of 1803, which is an anti-trust law. The litigation over this point may therefore consume several years.

DON'T PROCRASTINATE.—We feel in sympathy with the Dakota editor from whom we quote the following: "Last week a delinquent subscriber said he would pay up if he lived. He died. Another said: 'I will see you to-morrow.' He's blind. Still another said: 'I'll pay you this week or go to the devil.' He's gone. There are hundreds who ought to take warning of these procrastinators and pay up now."

SALE OF DRUGS IN DEPARTMENT STORES.—A bill to prohibit the sale of drugs in department stores in New York city has been advanced to the third reading in the state assembly. It was opposed on the ground that it was too radical, as under its provisions a department store could not even sell cough drops, and the constitutionality of the measure was also called in question. The bill was advanced to the third reading, however, by a vote of 65 to 40.—*Med. Record*.

SARCOMA OF THE LOWER JAW.—W. H. Hudson states as particular points of interest: In Case I, the successful removal of the tumor and the uneventful recovery of the patient after the first operation. The necessity is also shown for the very early and thorough extirpation of sarcomatous growths if permanent relief is to be hoped for. In Case II is the proof that a sarcoma may develop from a tooth follicle in a person eighteen years of age. *Archives of Pediatrics*.

ACUTE PERICHONDritis AND PERIOSTITIS OF THE NASAL SEPTUM OF DENTAL ORIGIN.—Gustav Killian reports the case of a man thirty years old. Pain was severe and foul-smelling pus escaped from the left nostril. The left second incisor ached. The mucous membrane of the nasal septum was opened and dressed. Six months later the patient again appeared, the tooth

was extracted and a cyst was disclosed. This was excised, and recovery followed.—*Munch. Med. Woch.*

PRESERVATION OF RUBBER ARTICLES.—Professor Krolikowski publishes the results of extensive tests which show that the best method of keeping rubber articles is in a 1 per cent solution of formol or zinc chlorid or a concentrated solution of boric acid. Red rubber keeps better than black, he asserts, other conditions equal. Rubber articles, he adds, should never be left exposed to the air or the action of cold.—*Jour. A. M. A.*

L. B. BRADLEY, 78 years old, and for fifty years a practicing dentist, died at Beloit, Wis., April 17, 1900. Of him Dr. C. A. Kitchen of Rockford, Ill., says: "I have had close and friendly relations with many dentists, but can recall none whom I held in greater esteem than Dr. Bradley. For many years he faithfully attended his professional duties, and made a host of friends. He was a man of strict integrity. 'None knew him but to love him; none named him but to praise.'"

TO CONVERT AN OLD PLATE INTO A NEW ONE WITHOUT CHANGING THE ARTICULATION.—Dr. Lossing's method is to take impression and a correct bite, run models and place on an articulator. Cut away all the old rubber except enough around the pins to hold the teeth in position, articulate them to the opposite teeth just as you want them, or any changes you might deem advisable can be made. Holding them in position, wax to model, invest and pack the same as in making a new set.

CAUSE OF TOBACCO POISONING.—H. Thomas has detected in tobacco smoke a poisonous, oily substance which produces violent headache, trembling, giddiness, etc. By treatment with a 2 per cent potash solution a phenol-like body may be separated which has an odor resembling creosote. To the presence of this oil the observed toxic effects of tobacco may be attributed, since it is known that those are not altogether dependent upon the proportion of nicotin in the tobacco.—*Scientific American.*

INDICATIONS FOR OPERATIVE INTERVENTION IN ADENOID VEGETATIONS.—Hagedorn of Hamburg (*Internat. Centralbl. fur Laryngol.*) very briefly and succinctly sums up the points as to when operative intervention is demanded as follows: 1. If the nasal breathing is not entirely free. 2. If frequent inflammatory processes arise in the throat. 3. If disturbances of the brain appear. 4. If nervous symptoms, such as convulsive attacks of cough, nocturnal enuresis, headache and aprosexia make their appearance.

FINDER'S RIGHT OF POSSESSION.—In Bridgeport, Conn., a street railroad company has brought a suit of replevin to recover a pocketbook which a passenger found on one of its cars. According to previous decisions, however, the railroad company is not entitled to recover the pocketbook. The general rule of law is that the finder of lost property has the right to the possession thereof as against everybody but the real owner, and it has been held in *Bridges vs. Hawesworth*, 7 Eng., L. & Eq., 424, a leading case, that the place in which a lost article is found does not affect this right to possession of the finder.

CALDWELL-LUC OPERATION FOR RELIEF OF CHRONIC EMPYEMA OF THE ANTRUM of Highmore promises to be the operation of choice for surgeons. The technique of the operation in the main consists in removing the anterior part of the inferior turbinate body on the affected side, then entering the antrum through the cuspid fossa by means of cutting forceps; then cleaning out the cavity by means of a sharp curet, followed by closing the mouth wound with catgut sutures and the establishment of drainage through the antral opening into the nose.—*Interstate Med. Jour.*

GANGRENOUS STOMATITIS TREATED WITH ANTISTREPTOCOCCUS SERUM.—W. C. Cahall reports a case of noma in a child seven years old suffering from typhoid fever. The disease was treated first by cauterization, then by the curet, and finally by an extensive cutting operation, but each time the gangrene reappeared. Then an injection of 10 c. c. of antistreptococcic serum was made and within twelve hours a line of demarcation formed, and within twenty-four hours the gangrenous part had disappeared, leaving a healthy-looking wound.—*Phila. Med. Jour.*

BEECHER'S SARCASM WAS EFFECTIVE.—In the Plymouth congregation there was at one time a woman who was a thorn in the flesh. She had a harsh voice and a stiff manner of speaking. Her long-drawn-out, dull discourses wearied the congregation, but Mr. Beecher was patient. At last he, too, reached the limit of endurance, and one evening when she sat down after talking nearly half an hour he arose, and in his deep tones said slowly: "Nevertheless, I still believe in women speaking in meeting." She spoke no more.—*March Ladies' Home Journal.*

SPECIAL VARNISH FOR ALUMINIUM is made by soaking 100 parts of gum arabic in 800 parts of liquid ammonia. This is heated about an hour and then allowed to cool and the varnish is ready for use. The aluminium to be coated is cleansed with soda and allowed to dry in a warm place, and after having covered the surface with the varnish it is heated in a furnace to a temperature 300 degrees Centigrade for a short time. After covering aluminium with a coating of this varnish it can be painted and polished without any fear of scaling off or cracking.—*Sci. American.*

"TO LIE LIKE A DENTIST."—Thirteen years ago Mr. Edmond DeGoncourt gave the origin of the above French saying. It was the Surgeon Lanne-longue that explained it at a dinner. Two men fought in the street. One bit off the nose of the other, who picked his once useful ornament out of the gutter. In despair the unfortunate went up to the office of a surgeon-dentist who was opposite, a man named Carnajou. The dentist sewed on the nose and it stayed there. Carnajou boasted of his skill; no one at that time believed such an operation possible; hence the proverb; and Carnajou had such a reputation as a liar that a real surgeon who soon afterward made reapplications of flesh did not dare to mention them. Despres, a pupil of Dupuytren, fastened on a piece of finger, and when the patient came to show it after a week, Dupuytren looked at it, pulled it off and said, "it doesn't stick?" The Dictionary of the Academy made a distinction; it quoted (1835) the proverb: "To lie like a puller of teeth."

ELECTIVE AFFINITY OF MICROBES FOR THE TISSUES.—MM. Bezancon and Labbe (*Gaz. hebdomadaire de med. etc.*) have shown that when experiments are made with a microbe which has produced a lesion of some organ, this microbe acquires a kind of affinity for the organ in which it has developed. For instance, on infecting animals with staphylococci coming from a suppurative arthritis, they have shown that the staphylococcus, in place of producing general infection of the animals, induces suppurative arthritis in them. In two cases only did the staphylococcus pass into the general circulation and induce endocarditis. Then a fresh series of inoculations made with this last staphylococcus no longer induced arthritis, but endocarditis. By this affinity the epidemic manifestations of certain maladies produced by specific organisms may be explained—e. g., the contagion of *otitis media* to which M. Lermoyez has recently directed attention.—*N. Y. Med. Jour.*

COMPARATIVE DEATH-RATES OF ABSTAINERS AND DRINKERS.—According to the *Indian Medical Record*, of 4,284 deaths collected by the British Medical Association, divided for reference into five classes—namely, *a*, total abstainers; *b*, habitually temperate; *c*, careless drinkers; *d*, free drinkers; *e*, habitual drunkards—the ages of death of those in each class were registered, together with the cause and the average of death for each class computed, with the following result: Total abstainers lived on an average 51.22 years. Habitually temperate lived on an average 62.13 years. Careless drinkers lived on an average 59.67 years. Free drinkers lived on an average 57.59 years. Habitual drunkards lived on an average 52.03 years. This corresponds to the well-known ratio of mortality in the deadly west coast of Africa—where it is held that temperate persons have the lowest death-rate, tipplers the next lowest, while the death-rate of total abstainers is greater than either.

VEIL AS A CAUSE OF REDNESS OF THE NOSE.—The *Public Health Journal* calls attention to the abnormal redness of the nose developed by the wearing of veils in winter. The mechanical action of the rough texture upon the sensitive skin and the collection of watery vapor within its meshes are responsible for this. The blood is driven from the tip of the nose to the adjacent parts, causing the blood-vessels to become enlarged and conspicuous. Passing from a cold to a warm atmosphere aggravates the condition. Permanency of the effect is favored by wearing the veil a long time without airing, and by the cold and exposure. The treatment consists in discarding the veil, avoiding for a time sharp winds and great cold and sudden changes from a cold to a warmer atmosphere. General massage should be practiced, with applications of vaselin, lanolin, or cold cream, followed by some simple powder, talc or starch. The veil should not extend below the nose, nor should it be too heavy or too tight.

TEETH AND EYES.—Neuschuler (*Recueil d'Ophtal*, Aug. 1899) reports a case similar to one reported by his father ten years ago. The symptoms noticed on attempting to read were heat and pain about the internal angles of the lids, which gradually spread to the whole orbital cavity and thence to the superior maxilla, causing such irritation in the teeth that the patient (a

medical student) had to stop reading. There was also contraction of the lid, eyebrow and forehead. Glasses and nerve sedatives had given no relief. Right eye emmetropic, left myopic 1.25 D. On fixing with both eyes a pencil at 30 cm. distance all the symptoms above detailed came on. Glasses were ordered for near use. These have been used for more than a year without return of the symptoms. In the case reported by the father severe dental pain came on whenever the patient had to play from music at the piano; after some time it happened that insufficiency of the internal recti muscles was found to exist, and on correcting this the teeth symptoms entirely yielded.

ERYSIPELAS VS. HORNETS.—A physician in Tennessee was trying to practice medicine in a little village. For nearly four months his shingle had hung out and not a single patient had appeared. His money was getting down to the lowest ebb, and he was very much depressed, when one evening he heard the "rattlety, rattlety, bang" of a man riding up to his door at great speed, and he believed that a patient had actually come at last. In his eagerness he forgot his professional dignity, and rushed to the door and invited the man in with true southern hospitality. His visitor proved to be a robust farmer with a big swelling over the right eye, which showed a strong line of demarcation vividly red and angry, the redness running up into the hair. The visitor asked what the trouble was, and the doctor replied: "I am very sorry, my friend, but unfortunately it is a very bad case of erysipelas," whereupon the farmer jumped up, seized his hat, and turning to the door, remarked: "Ery-hell; that's a hornet!"—*Dr. R. H. M. Dawbarn in Items.*

PERIODIC DIPSO MANIA.—P. C. Remondino (*Quart. Jour. Ineb.*) maintains that periodic dipsomania is due to some physical or psychic defect, and removal or change of occupation frequently destroys the tendency; that its periodicity may be due somewhat to a diathetic condition analogous to that of rheumatism or gout. In a majority of cases there is a tendency to self-limitation of the disease at certain ages, the age of strongest virility being the period of most frequent and serious attacks. Any physical condition disturbing the nervous system may be a factor in its causation, and it is more liable to occur in blond races. He believes it is due to ancestral habits of intemperance among these races. Our changeable climate favors its development, and occupation involving nervous strain, malaria, foul air, badly ventilated rooms, and other irregularities are all to be considered. The disease is liable to terminate in habitual drunkenness. Moral treatment is useless. Proper physical regimen, general observation to all hygienic laws, avoidance of irregular emotional strains, etc., are essential parts of the treatment.—*Jour. A. M. A.*

URIC ACID AS THE CAUSE OF ASTHMA.—Continued observations make the uric acid explanation of the very large majority of all cases of asthma, especially those accompanied by nasal polpi, appear more and more rational, and more and more refer these polpi to a place among the symptoms, removing them from their widely assigned place as the cause of asthma. This statement is one of the greatest interest in the study of asthma, and at once sug-

gests that polypoid degeneration of the ethmoidal bodies, in part or in whole, is in many cases the result of repeated uric acid irritation of these bodies. This statement will, I believe, some day be proven beyond question by the nasal microscopist. It is useless to look for the cause of a polypus in the growth itself; it must be sought for in the ethmoidal tissue from which it springs. Study of certain cases, supplemented by extended observation in a number of others, makes clear what might be expected—removal of nasal polypi no more cures asthma than would the removal of tophi about the joints of the fingers cure gout.—*Dr. John Dunn.*

DENTISTS PAY THEIR DUES IN A GREAT HURRY.—* * * “For sometime past the dentists here have been lukewarm in their support of the Protective Association and did not seem to care whether it got along or not. Since Wednesday all has changed, and they are breaking their arms, so quickly do they cough up their dues. Dr. Robinson is the cause of it all.

“A real nice man came into his office Wednesday. He removed his awning, sized Robinson up for hardware, and said: ‘Doctor, I represent the Crown Dental Company and Dr. James E. Low. I would like—’

“Dr. Robinson had a patient down at the time and had his foot braced against his head while he pulled about a yard of teeth, but he immediately suspended operations in the trenches and rushed over to the nice man. ‘What’s that?’ shouted Robinson. ‘Why, doctor, I say I represent the Dental Crown Low—I mean I Low Crown Dental Company, you know, why—’

“The dingbat, or forceps, or frog-sticker, or whatever it was in the dentist’s hand made a heliographic sort of movement in the air, and he whirled his hand around and yelled: ‘You get out of here!’ ‘Oh,’ said the representative of the C. D. and L. Co. ‘Now keep cool. I just wanted to know when you are going to settle.’

“‘I’ll settle you right now if you don’t get out of here. Unnerstan’ me? Get out. I’m bigger man’n you. Lots bigger. You get out o’ here.’ The representative took a long standing jump and chased himself down stairs.

“The dentists heard of it and they immediately began to pay up their dues, get the old musket oiled up, have new trap doors put in the stairs and mine the office floor. They also have a peculiar double-spavined walk, doubtless caused by being forced by circumstances to tote around two Krupp naval guns in their tobacco pockets. The representative of the dental trust will get a hot old reception in this town.

“Since calling on Dr. Robinson the representative of the company has been seeking ‘settlements’ in a number of offices here. Each dentist upon whom he made his demands has calmly referred him to the Dentists’ National Protective Association. The representative told Dr. Clare L. Smith that dentists in many places had been arrested and their offices closed until the question of the patents had been decided. This cannot be done with members of the Association, and the trust will have to take up the fight with that organization. Some of the dentists outside of the association may be arrested, as that is the usual way the company has of dealing with cases where dentists will not pay.”—*Columbus (O.) Citizen.*

CRITICISM IN AN EPITAPH.—An esteemed Canadian correspondent writes to the *New York Medical Journal* as follows:

The following lines were brought by an aggrieved husband to the proprietor of a marble works to be inscribed on a tombstone. The evident object of the man was to injure the doctor rather than to perpetuate his wife's memory. Needless to say, the epitaph was not cut in marble, but filed away as an object of curiosity, and as such is presented to your readers *verbatim et literatim*:

"The deth of Jane. Smith whife of John. Smith aged 36 years Whose life Was haissened a Way By dr. Scalpel on the 16th of feBuary 1882

"With out one moments Warning

With Cloriform and

the Nife i lost my life

and O my infant dauter

Was made a slauter the

SCull Been put a sunder."

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